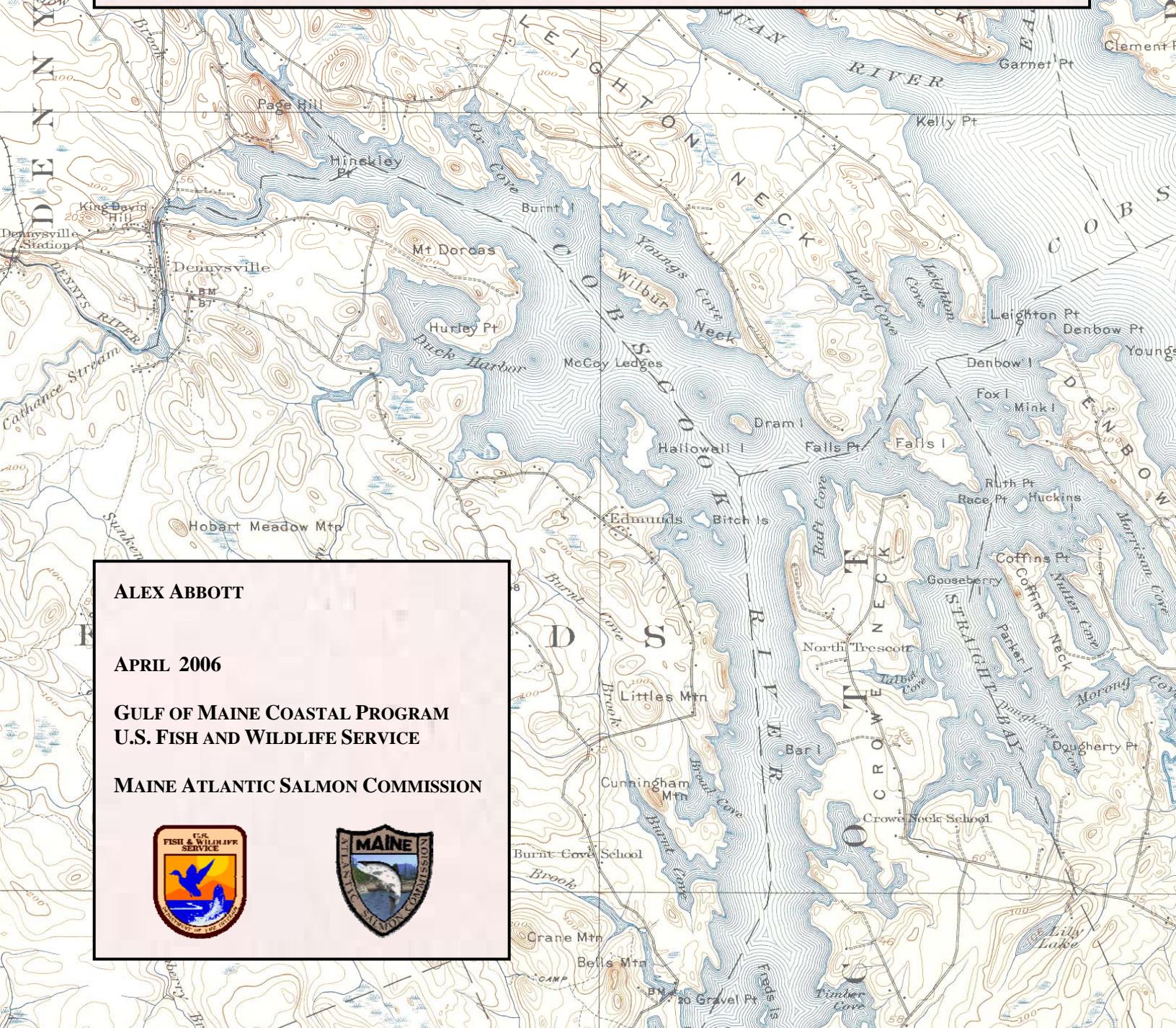
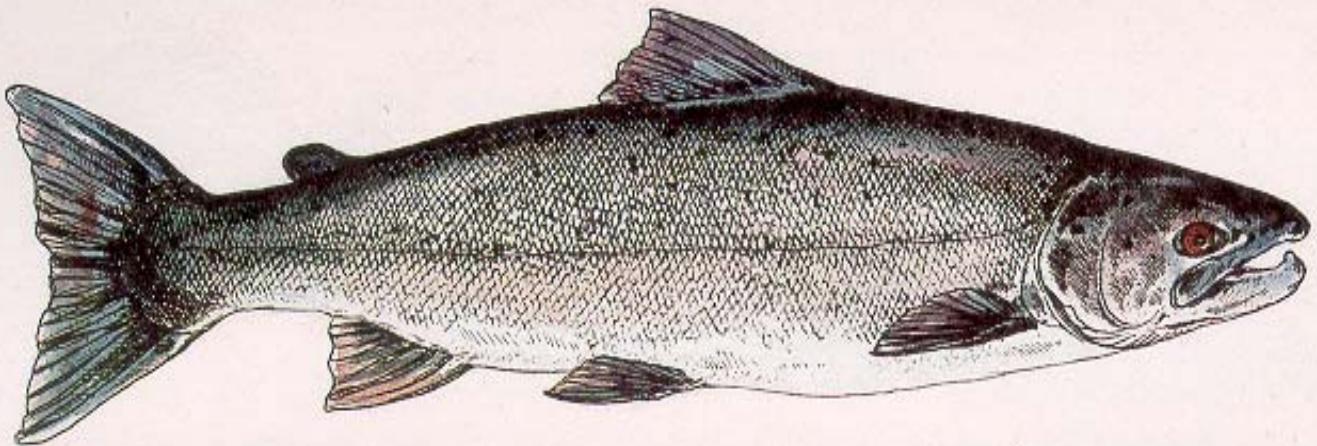


MAINE ATLANTIC SALMON HABITAT ATLAS



ALEX ABBOTT

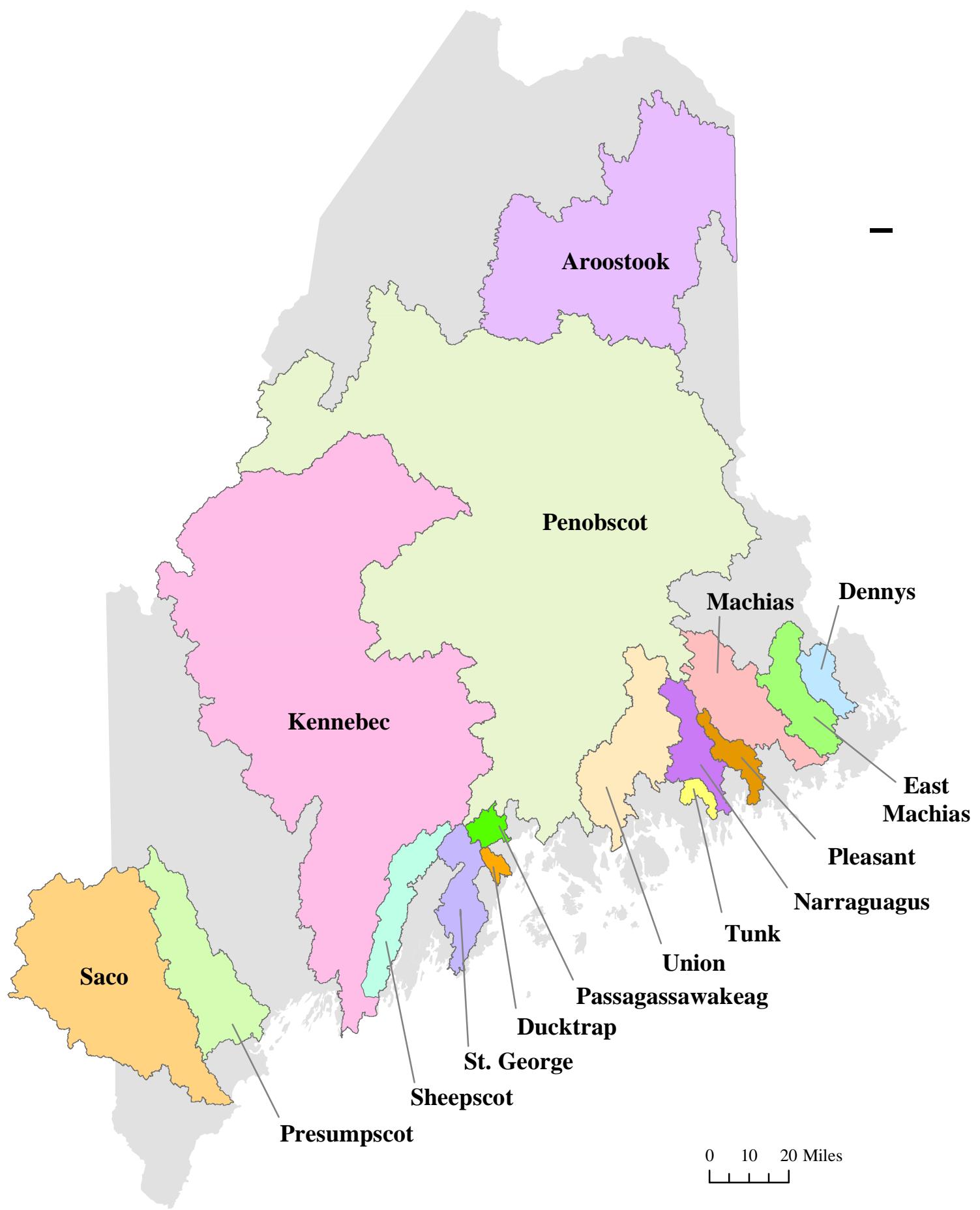
APRIL 2006

GULF OF MAINE COASTAL PROGRAM
U.S. FISH AND WILDLIFE SERVICE

MAINE ATLANTIC SALMON COMMISSION



Maine Watersheds with Atlantic Salmon Habitat Surveys



MAINE ATLANTIC SALMON HABITAT ATLAS

April 2006

Introduction

This third edition of the *Maine Atlantic Salmon Habitat Atlas* has been published in digital form to provide detailed maps of surveyed Atlantic salmon habitat in Maine. The habitat data which forms the core of the atlas was developed from field surveys conducted between 1994 and 2005 in the Aroostook, Dennys, Ducktrap, East Machias, Kennebec, Machias, Narraguagus, Passagassawakeag, Penobscot, Pleasant, Presumpscot, St. George, Sheepscot, Tunk and Union River watersheds by staff of the Maine Atlantic Salmon Commission and the U.S. Fish and Wildlife Service. These surveys were conducted to identify important Atlantic salmon spawning and rearing areas. The habitat data resulting from the surveys is meant to assist with a variety of research, management and planning activities including fry stocking, developing production estimates, habitat protection activities and data collection. While the atlas depicts spawning and rearing habitat and important point features, the digital data used to create these maps also includes information on habitat categories, composition, length, width and depth measurements, as well as canopy and other vegetation variables.

Each river surveyed appears alphabetically within the atlas, and has an index map showing the arrangement of individual map pages. Map pages are numbered from upstream to downstream, starting on the mainstem, and then proceeding alphabetically by tributary. Map pages are presented at a scale of 1:15,000 using modified USGS topographic map data as a basemap. Habitat units are represented as line segments depicting the length, but not width, of each habitat unit. All map pages contain symbols and labels indicating surveyed and unsurveyed subreaches into which each stream is divided by the Maine Atlantic Salmon Commission, and most also show points of interest with explanatory labels.

Data Sources

The data used to create this atlas came from a variety of sources. Habitat and associated data was developed by the Gulf of Maine Coastal Program of the U.S. Fish and Wildlife Service and the Maine Atlantic Salmon Commission. Many resources were supplied by the Gulf of Maine Coastal Program, including software, hardware, and data. Basemap data, including USGS digital topographic map data, and most watershed boundaries, were supplied by the Maine Office of Geographic Information Systems (MEGIS) and modified by the Gulf of Maine Coastal Program.

The digital habitat dataset (ASHAB3) used in the creation of this atlas is available for download from the MEGIS Data Catalog (internet address: <http://apollo.ogis.state.me.us/catalog/>). A detailed metadata document is also available there describing how the data was derived and how it is structured, including information about data attributes.

Explanatory Notes

Several features of the maps in this atlas require further description than is supplied in the legend.

Limited Spawning Habitat refers to those flatwater habitat units (deadwaters, glides and pools) in which spawning area is less than 30% of the unit area. Units containing more than 30% spawning areas are classified as **Spawning Habitat**. Note that most flatwater units contain no spawning habitat.

Subreaches identified in the atlas were defined by the biologists who completed each of the habitat surveys, and are used as fundamental units of organization. The **subreach codes** with which these reaches are labeled begin with a unique identifier for that stream (e.g., 1MAINST), and are followed by the distance in kilometers from the bottom to the top of the subreach as measured up from the mouth of the stream. The **buffer** polygons highlighting the subreaches are meant only as a cartographic tool for identifying them, and do not represent any particular biological or legal boundaries. Note that not all streams have assigned subreaches, but that all subreaches without habitat surveys are symbolized distinctly with a brown dashed buffer outline. In areas where only a part of a subreach has been surveyed, each part of that subreach is symbolized to indicate the approximate extent of the survey.

USGS topographic map images represent data that was originally mapped at a scale of 1:24,000. These images vary in source date from 1948 to 1995. **Contour lines** on the images exist with three different contour intervals depending upon standards in use at the time of the original survey of each quadrangle. The **map grid** measures surrounding each map page allow location of data as projected in NAD83 UTM (Universal Transverse Mercator) Zone 19 North Meters, which leads to a shift from the grid lines often evident on the USGS map images (originally projected in NAD27). When using the measures to find a location, use a straightedge aligned with the appropriate tics along the map borders.

Some long sections of streams between habitat areas have not been mapped. These are generally deadwater stretches that have no spawning or rearing habitat, nor any labeled points of interest.

Acknowledgements

Without the dedication and talent of past and present staff this information and atlas would not exist: Marty Anderson, Ernie Atkinson, Ed Baum, Ken Beland, Denise Buckley, Paul Christman, Tracy Copeland, Jason Czapiga, Norm Dube, Kevin Dunham, Melissa Evers, Gregg Horton, Dan Kircheis, Fred Kircheis, Greg Mackey, Jim MacMichael, John Magee, Jerry Marancik, Maggie Martin, Dan McCaw, Henry Nichols, Mariska Obedzinski, Dave Ouellette, Kipp Powell, Peter Ruksznis, Wayne Simmons, Mitch Simpson, Randy Spencer, Justin Stevens and Joan Trial. Thanks for title page map images go to the University of New Hampshire Library's Historic USGS Maps of New England & NY (internet address: <http://docs.unh.edu/nhtopos/nhtopos.htm>) Special thanks are due to Jed Wright for his initiation and support of this project, and the many creative ideas he has contributed.

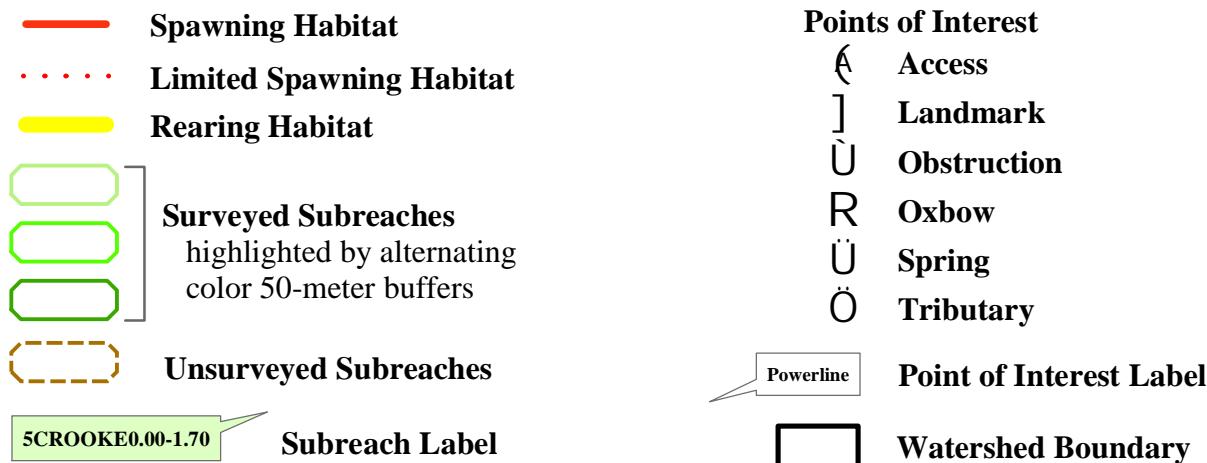
For more information, please contact:

Alex Abbott c/o
Gulf of Maine Coastal Program
U.S. Fish and Wildlife Service
4R Fundy Rd.
Falmouth, ME 04105
207-781-8364

OR

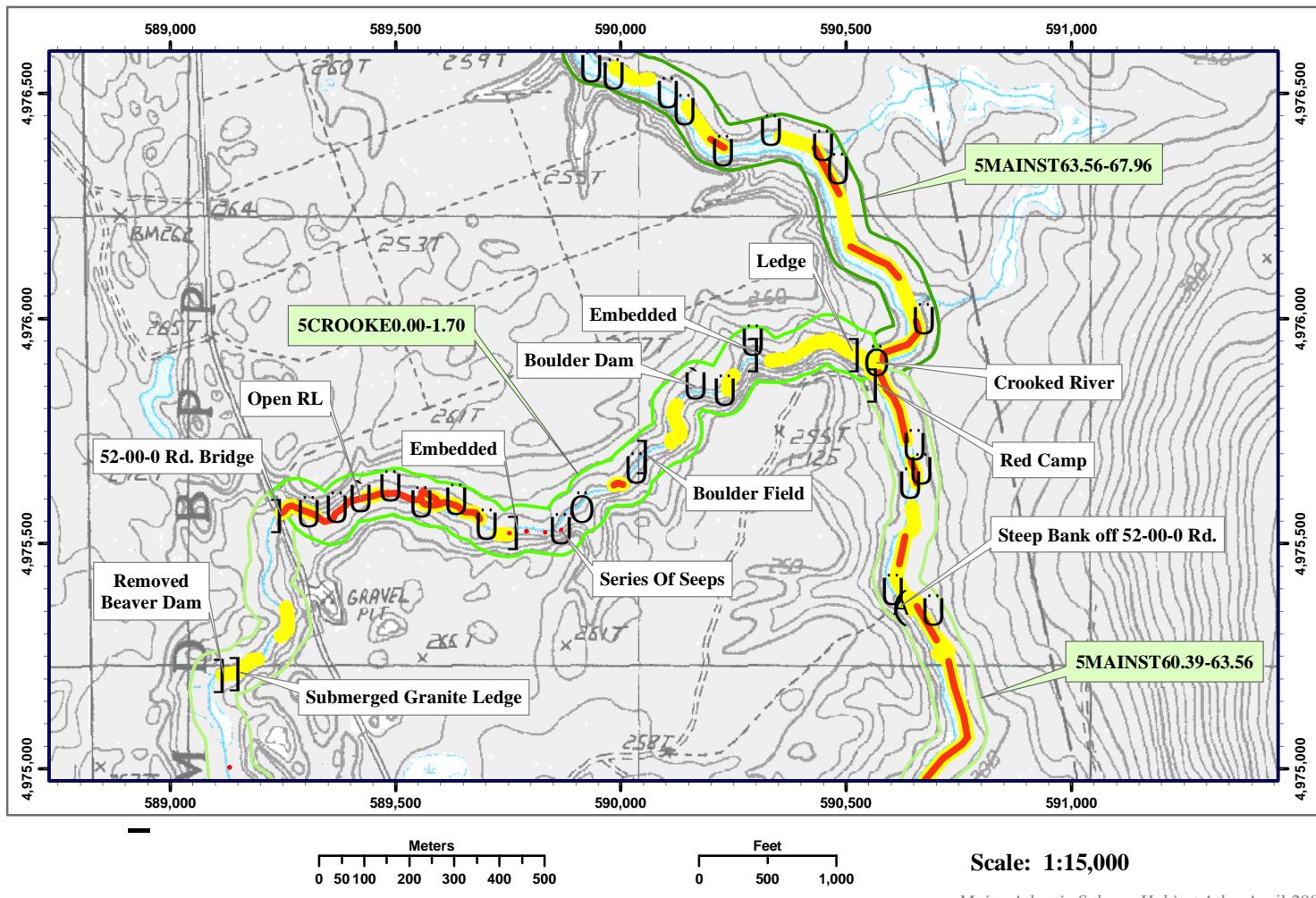
Maine Atlantic Salmon Commission
650 State Street
Bangor, ME 04401
207-941-4449

LEGEND

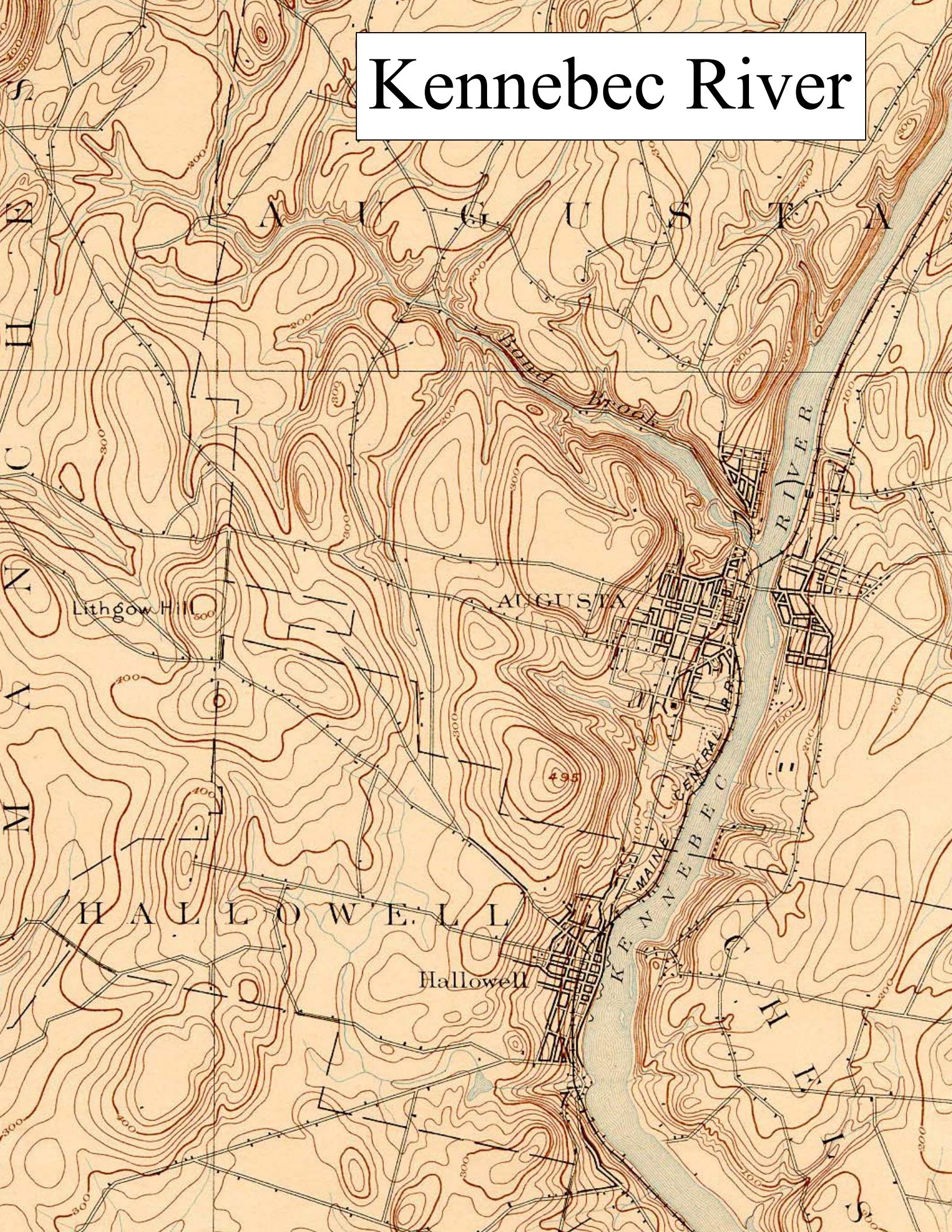


- > **USGS Topographic Map Images** provide basemap data, and have been modified in color to minimize their visual impact. Water features remain blue, but have been lightened, while forest cover, contour lines, and all other features symbolized normally with black lines, such as roads, structures, and labels have been changed to grey.
- >> Contour Interval = 10 Feet, 20 Feet, or 3 Meters, depending on quadrangle mapped.
- > The grid measures surrounding the maps are in UTM Meters with labels every 500 m, and tics located every 50 m.
- > RR and RL found often in Points of Interest labels refer to River Right and River Left (when facing downstream).
- > For further description of Subbreaches, USGS Topographic Map Images and other map features, please refer to the *Explanatory Notes* section of the atlas.

Sample Map Section

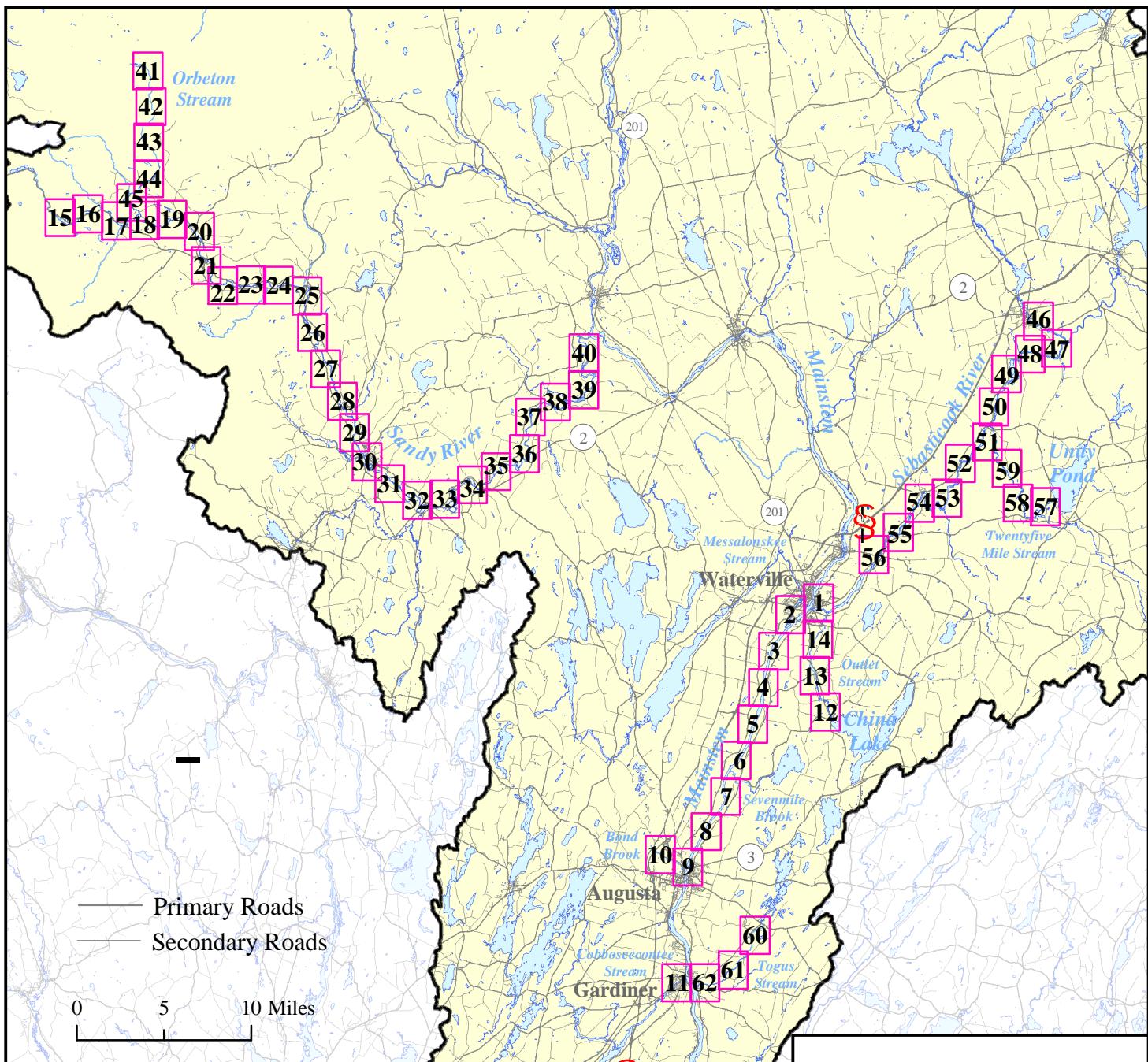


Kennebec River



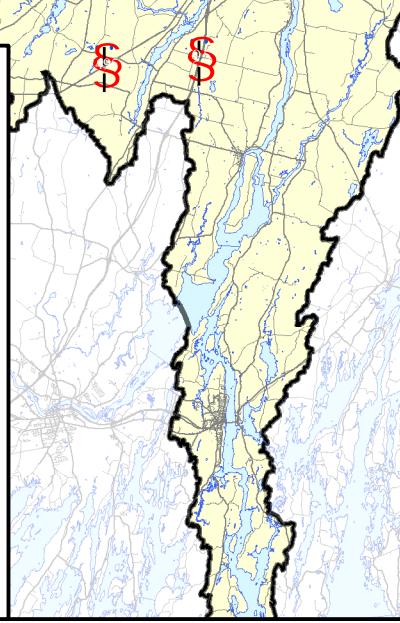
Kennebec River

Index Map



Branch Name

Branch Name	Map Numbers
Mainstem	1 - 9
Bond Brook	10
Cobosseecontee Stream	11
Messalonskee Stream	2
Outlet Stream	12 - 14
Sandy River - Mainstem - Orbeton Stream	15 - 45
Sebastianook River	46 - 56
- Twentyfive Mile Stream	57 - 59, 51
Sevenmile Brook	6, 7
Togus Stream	60 - 62

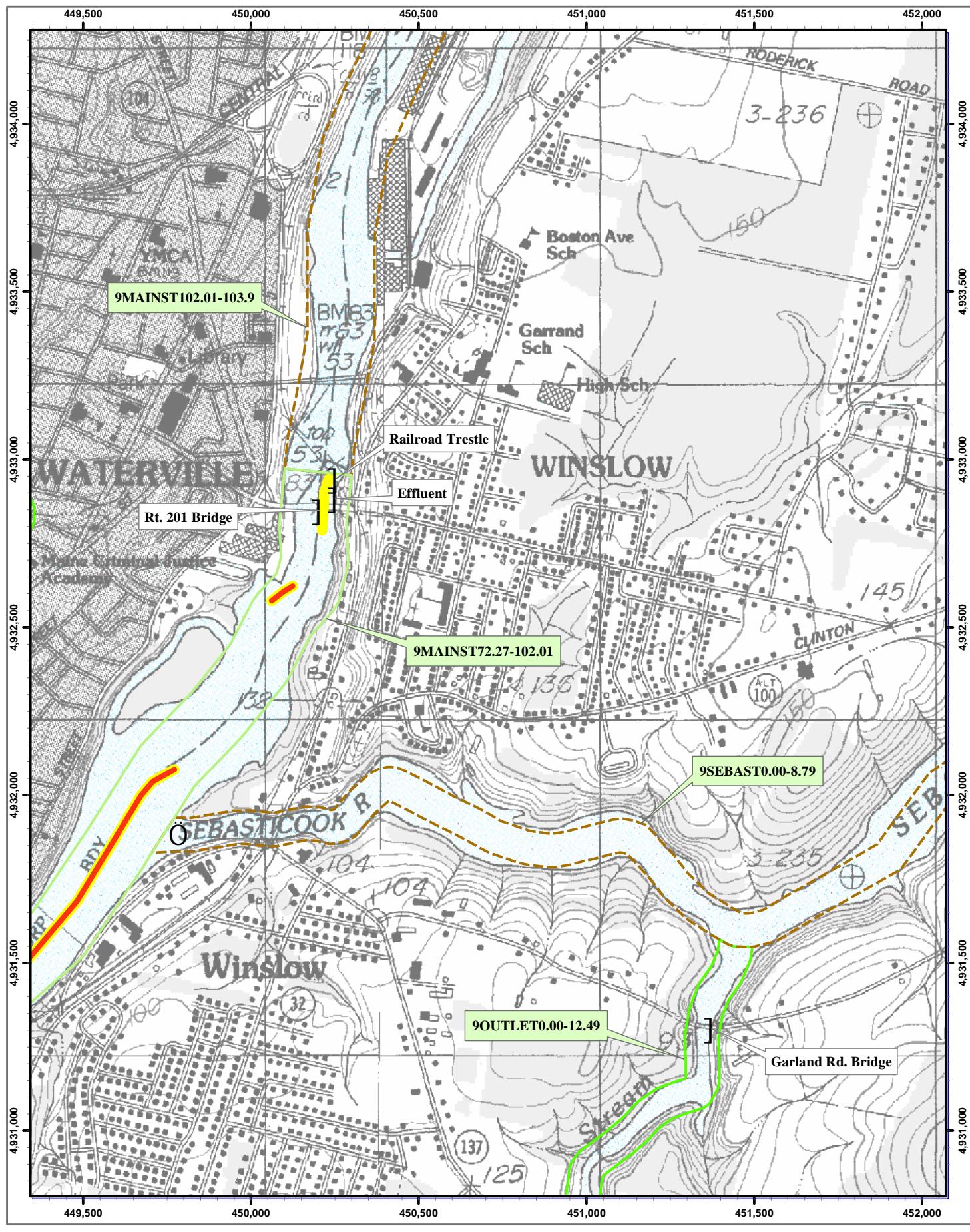


Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Mainstem

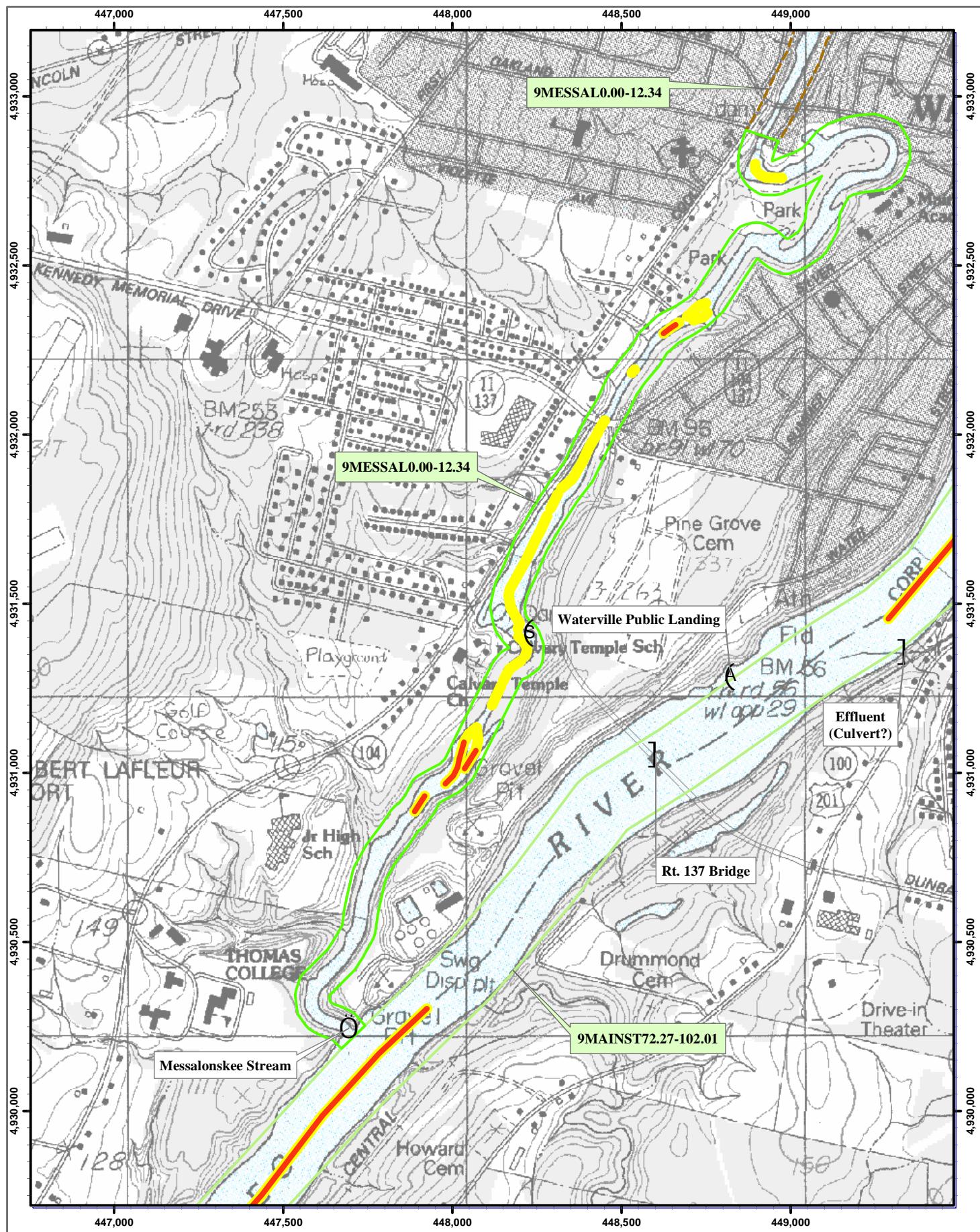
Map 1



Kennebec River

Mainstem

Map 2



Meters

A horizontal number line with tick marks at intervals of 50, ranging from 0 to 500.

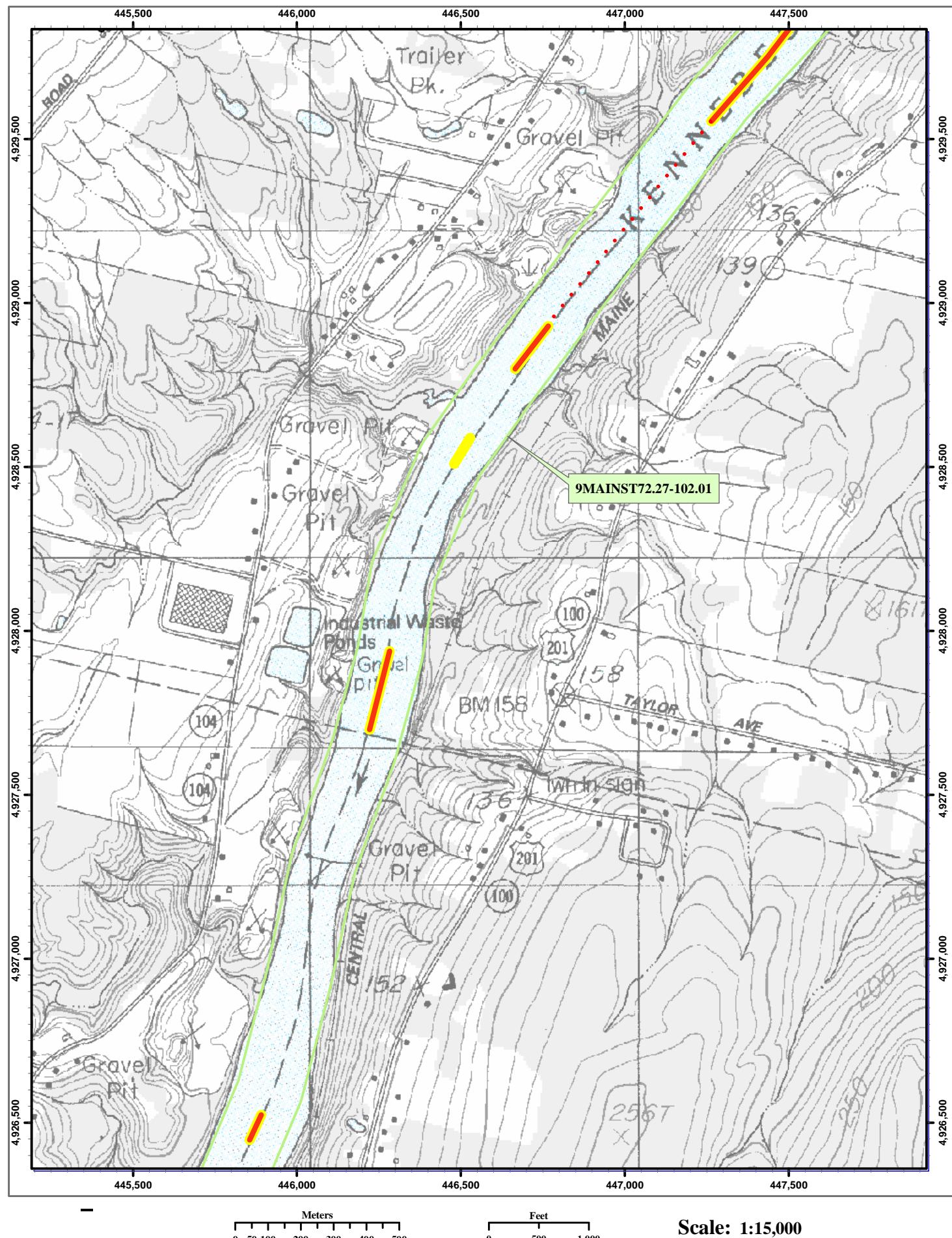
A horizontal number line starting at 0 and ending at 1,000. There is a tick mark halfway between 0 and 1,000, labeled "Feet".

Scale: 1:15,000

Kennebec River

Mainstem

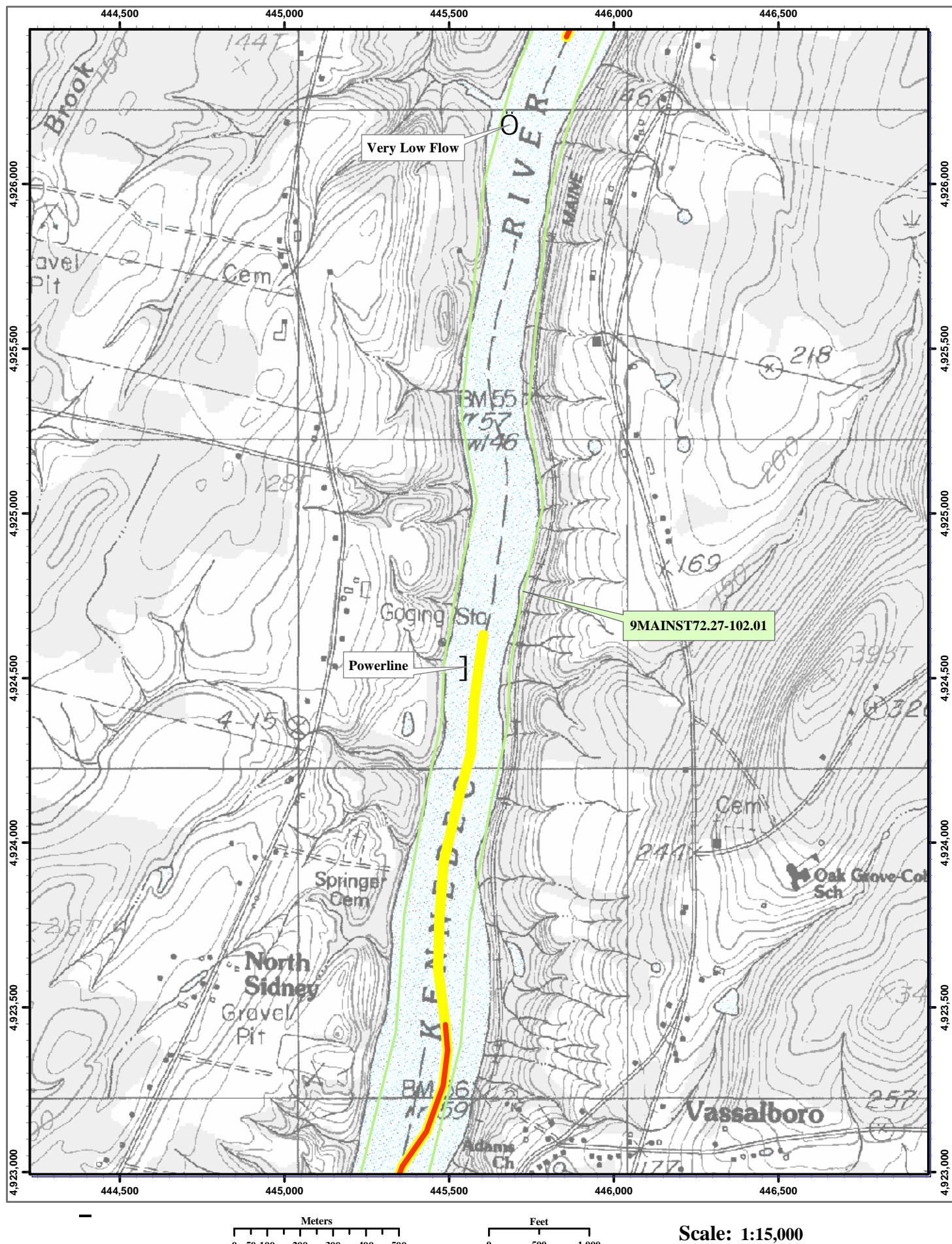
Map 3



Kennebec River

Mainstem

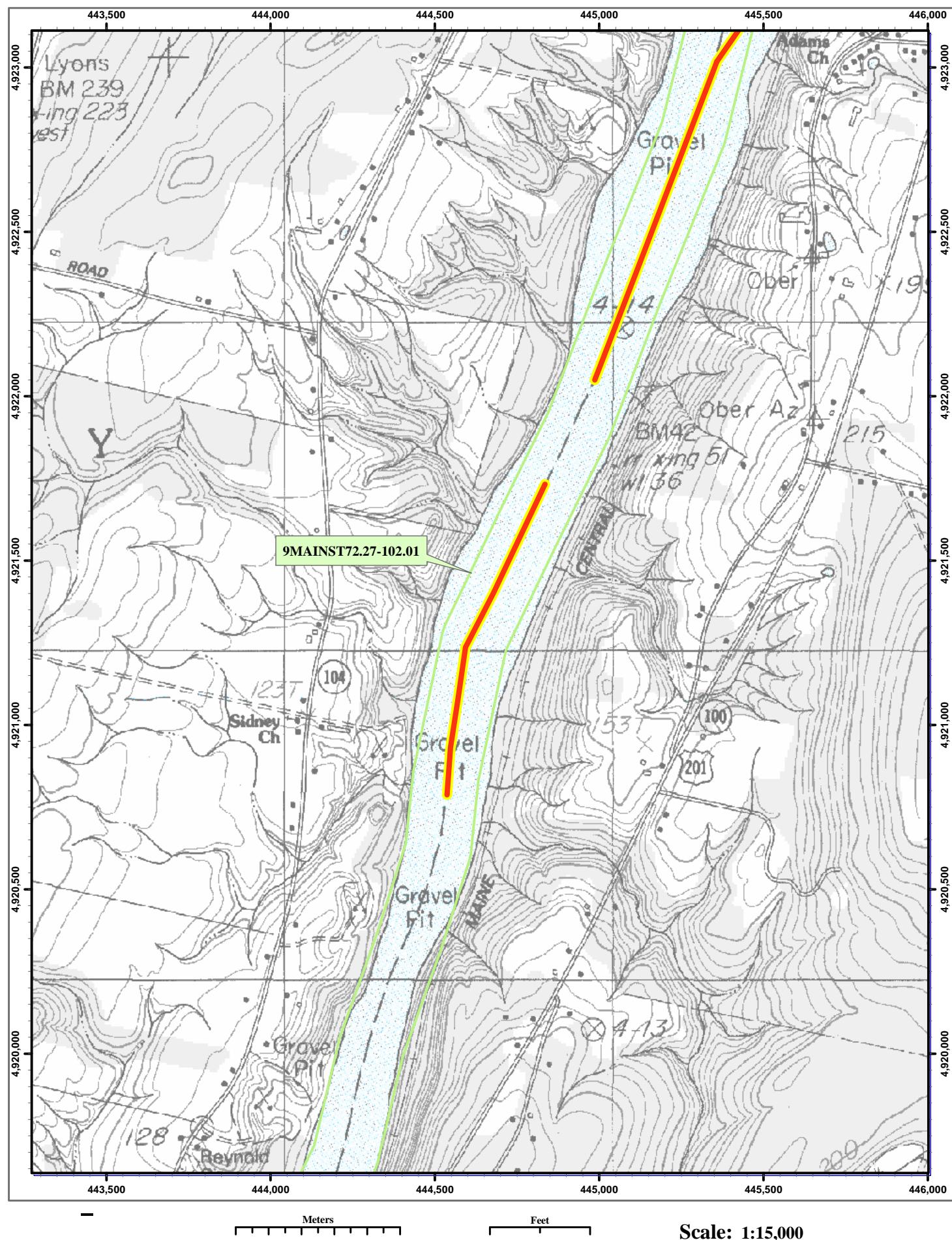
Map 4



Kennebec River

Mainstem

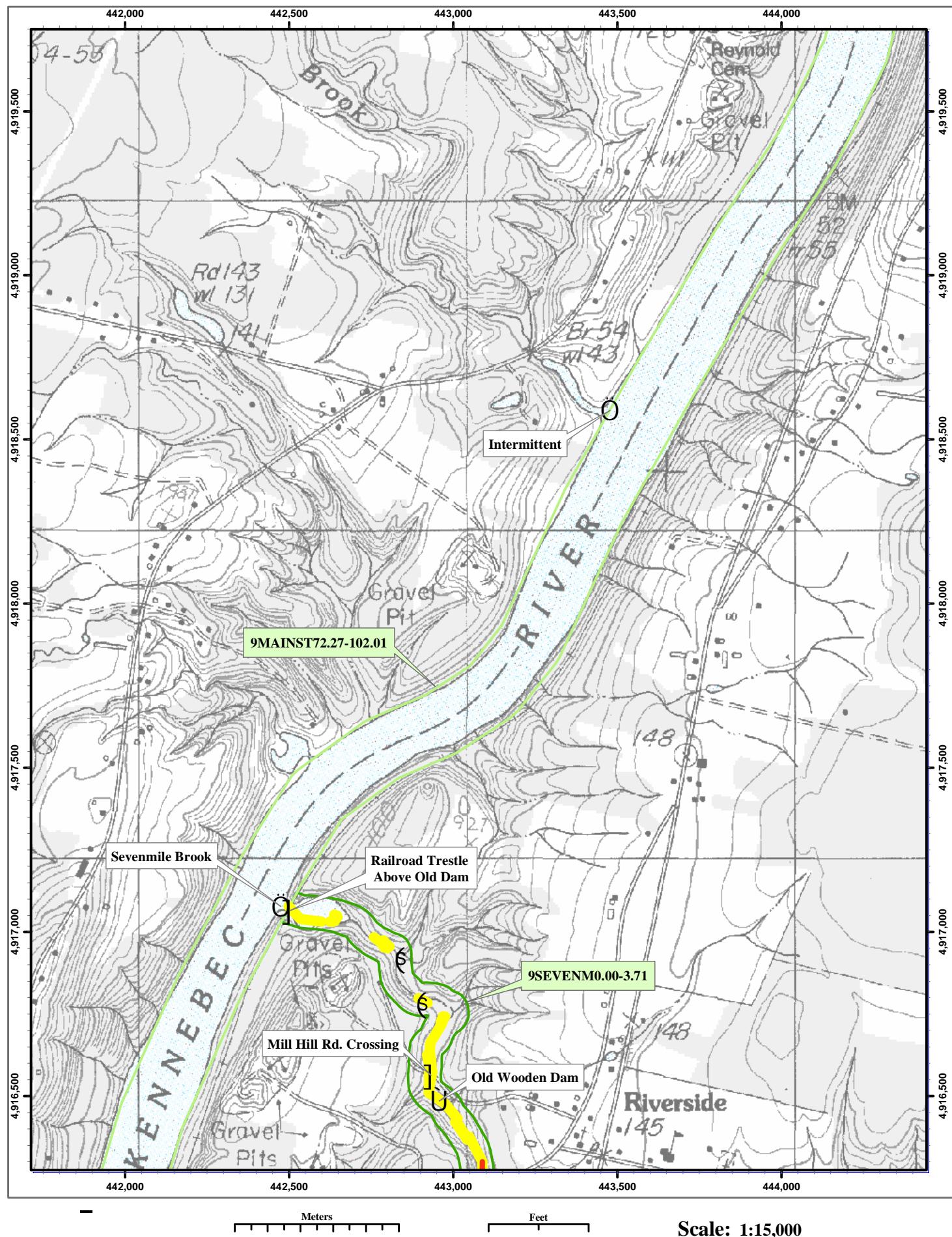
Map 5



Kennebec River

Mainstem

Map 6



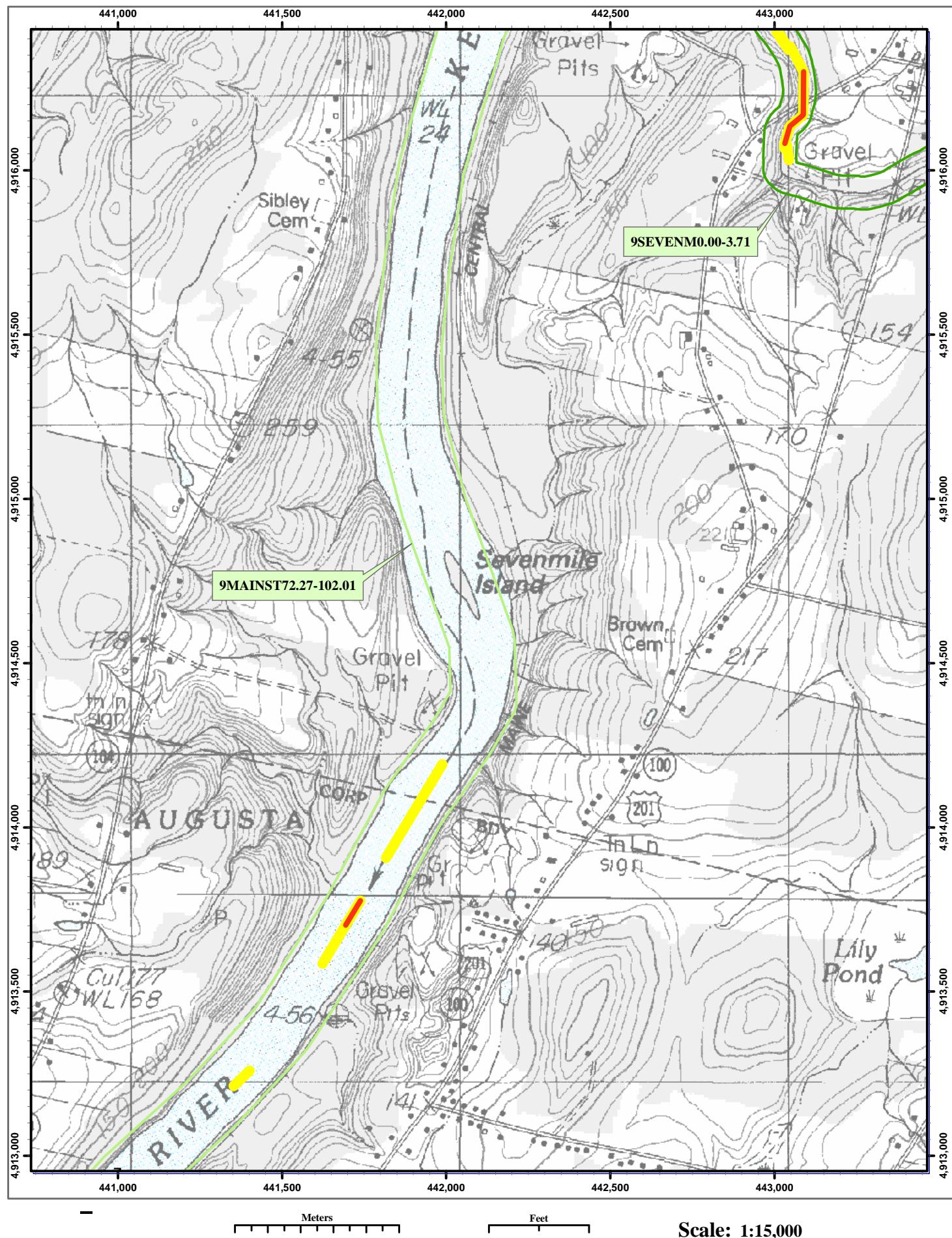
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Mainstem

Map 7



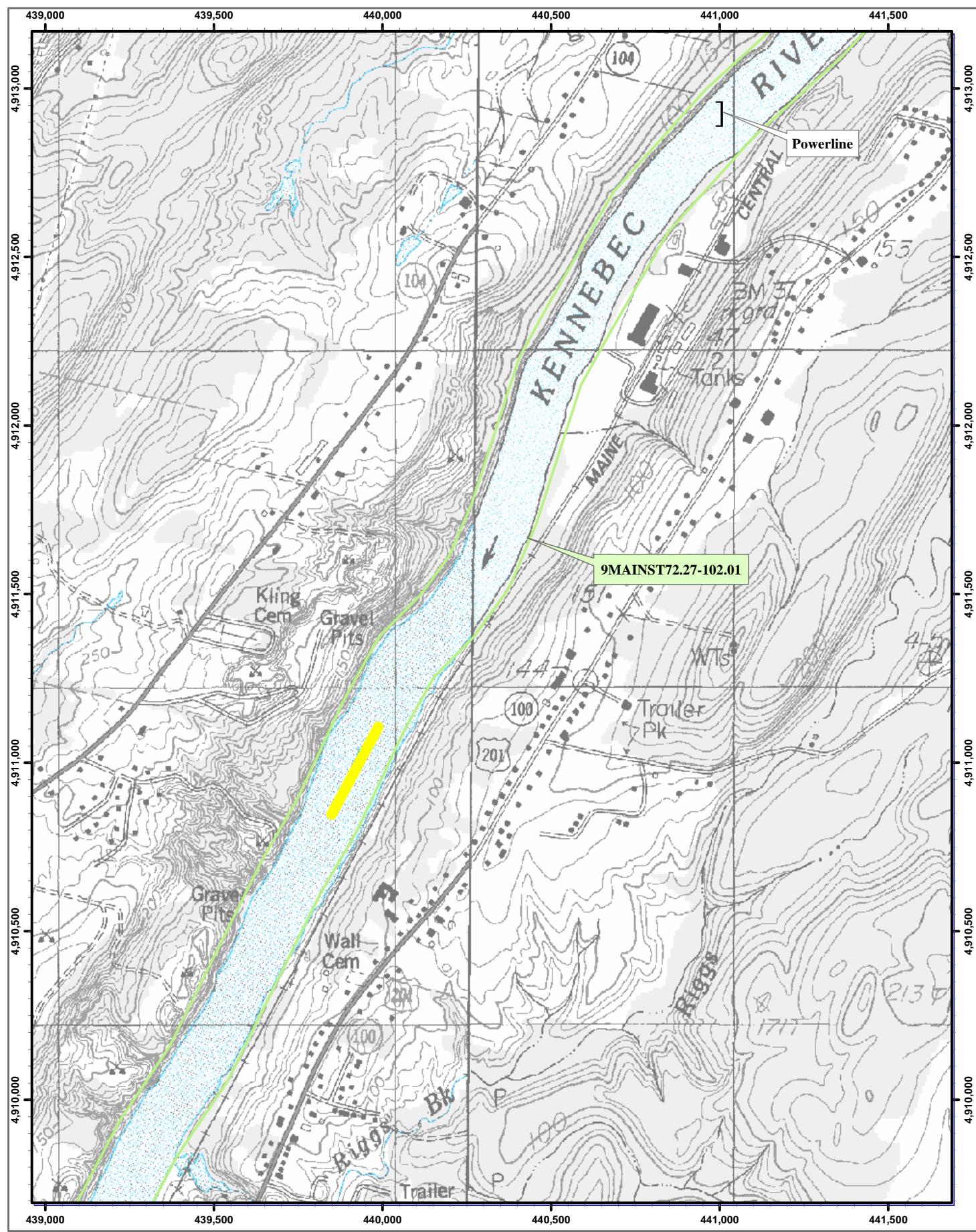
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Mainstem

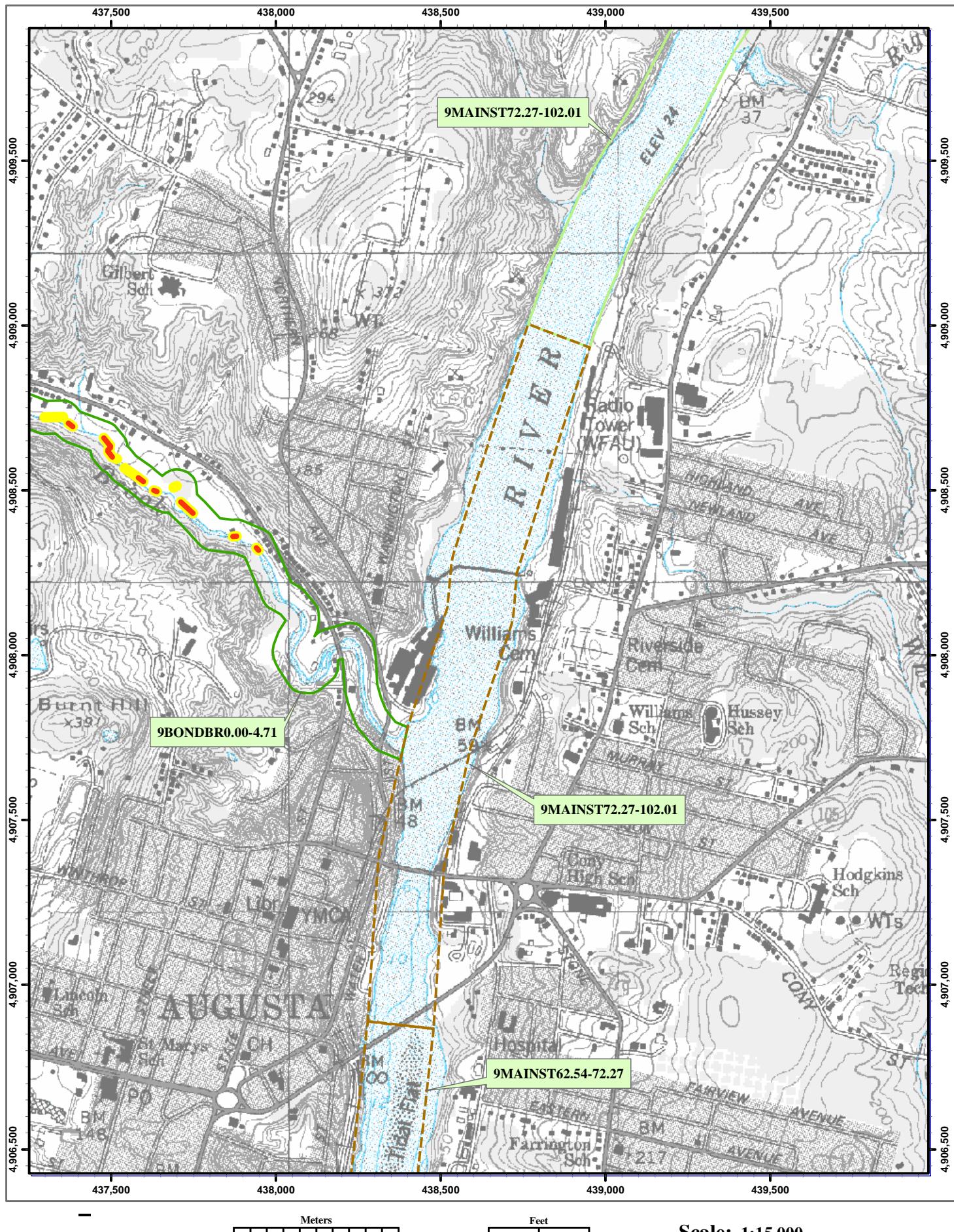
Map 8



Kennebec River

Mainstem

Map 9



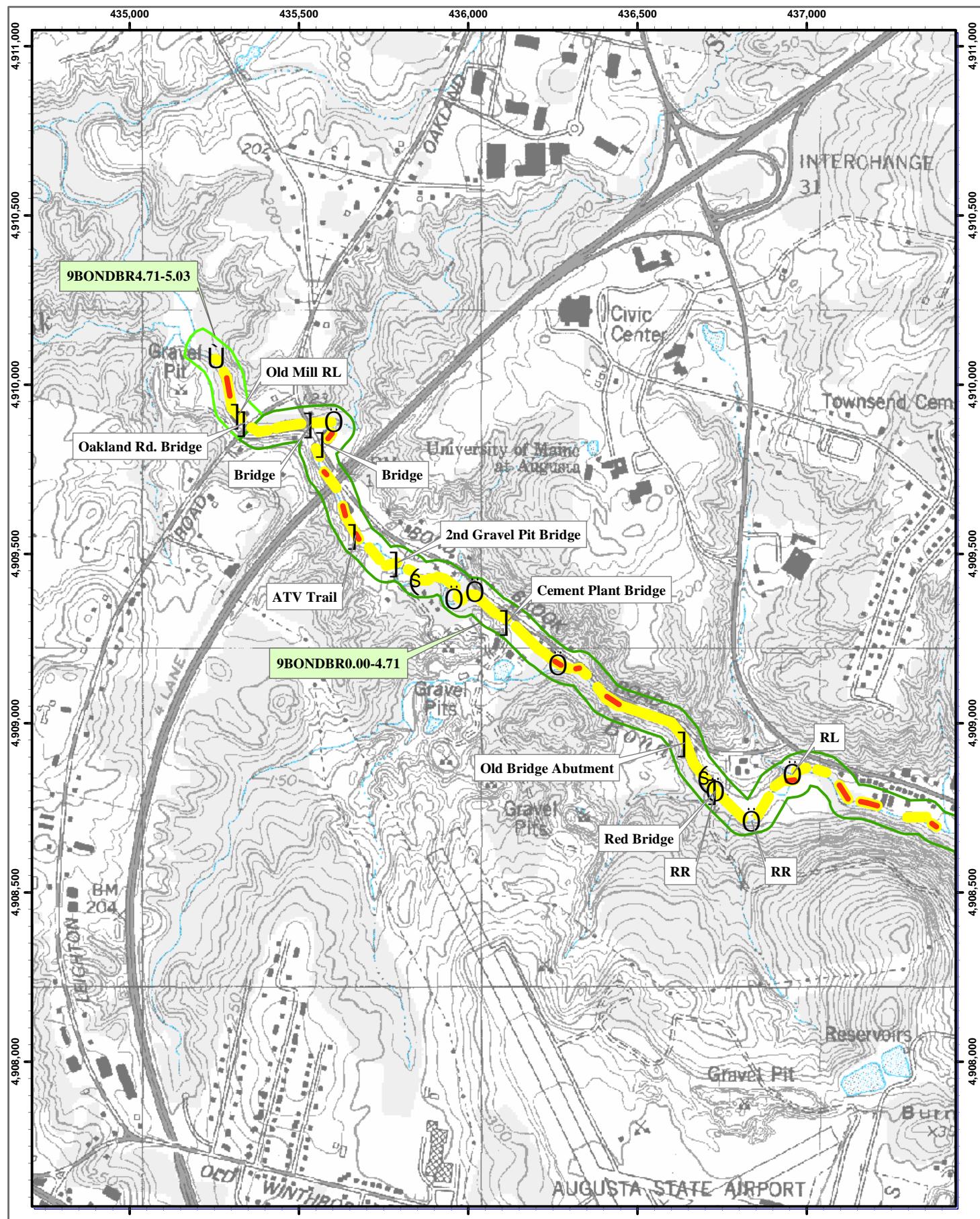
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Bond Brook

Map 10



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

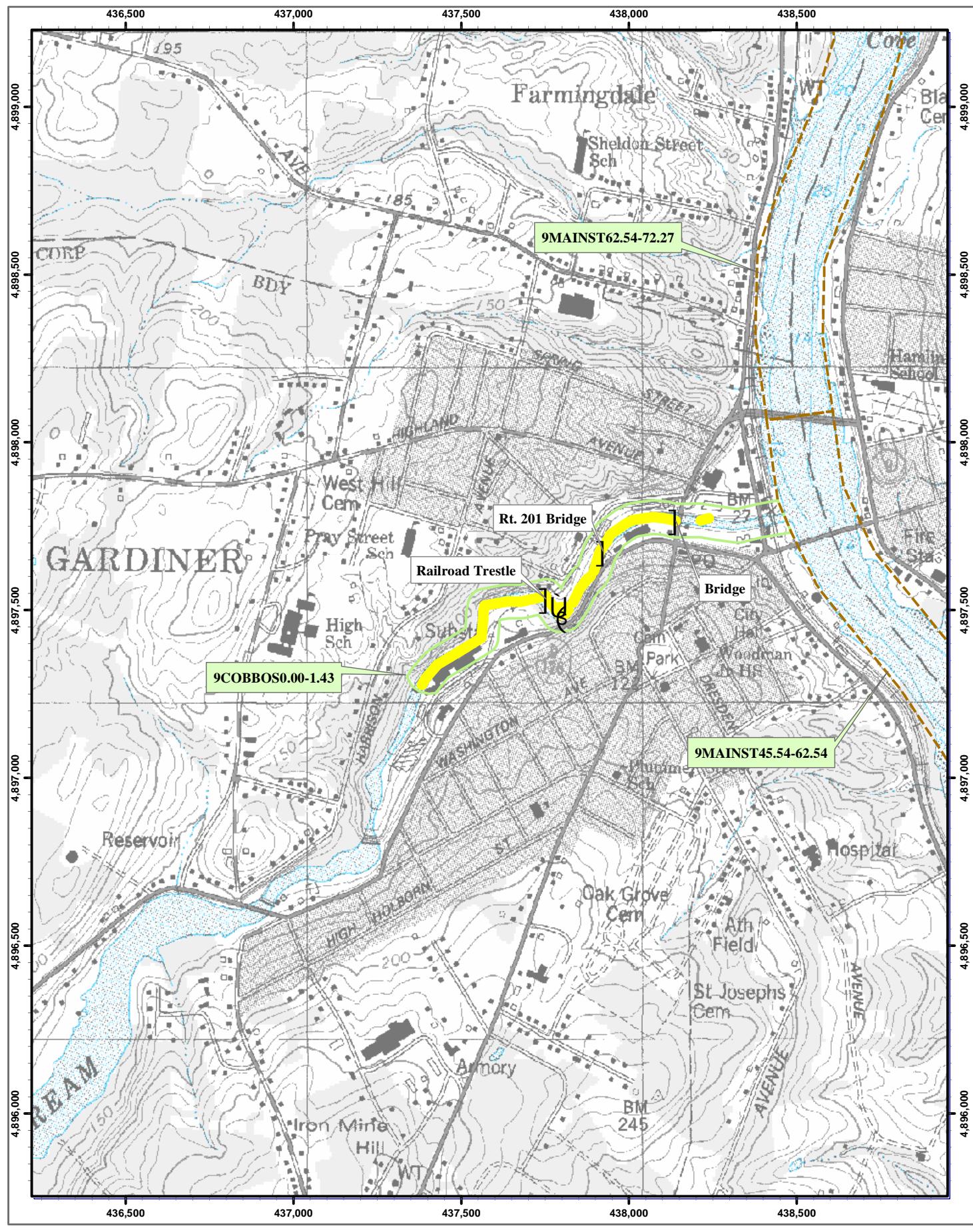
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Cobbosseecontee Stream

Map 11



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

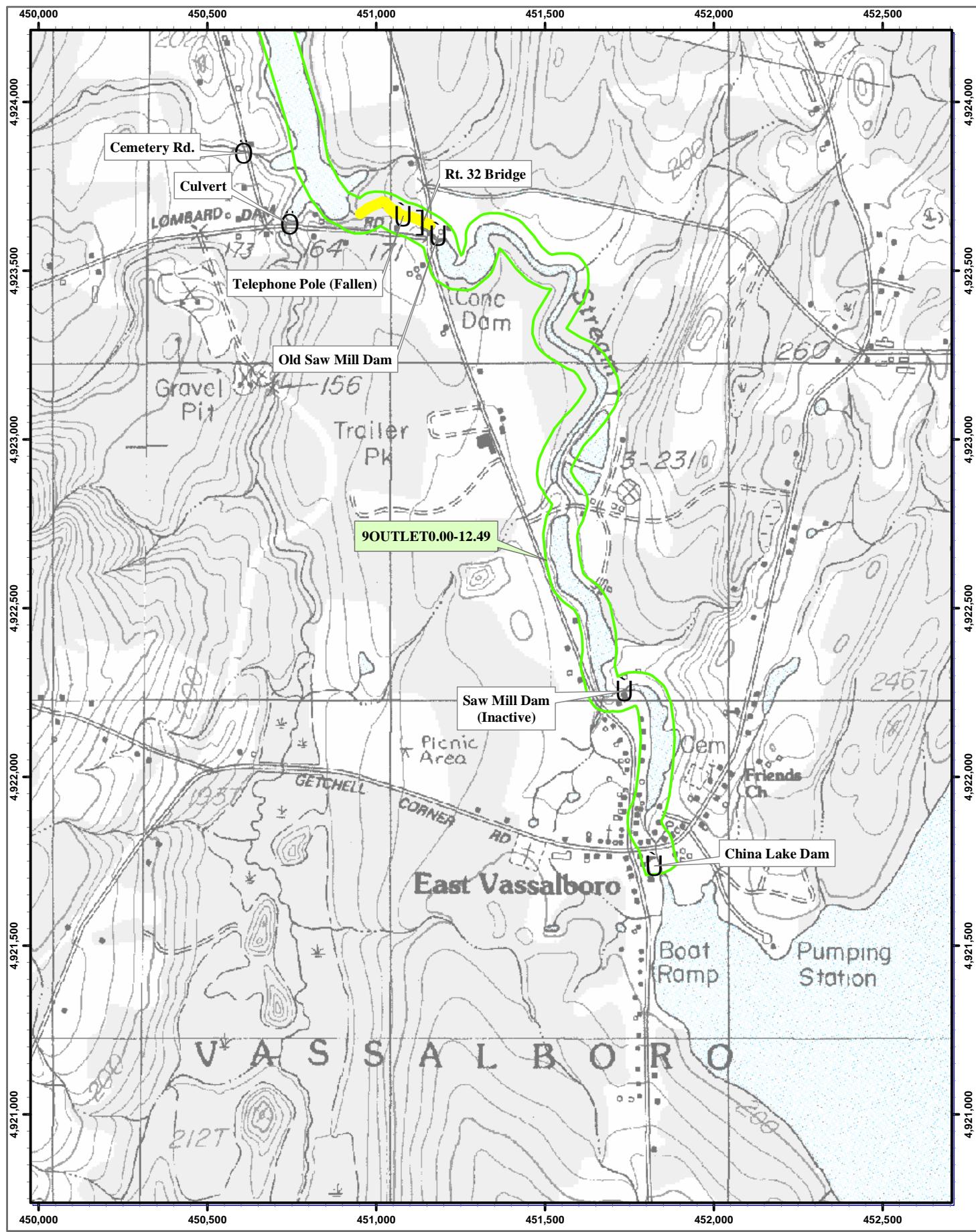
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Outlet Stream

Map 12



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

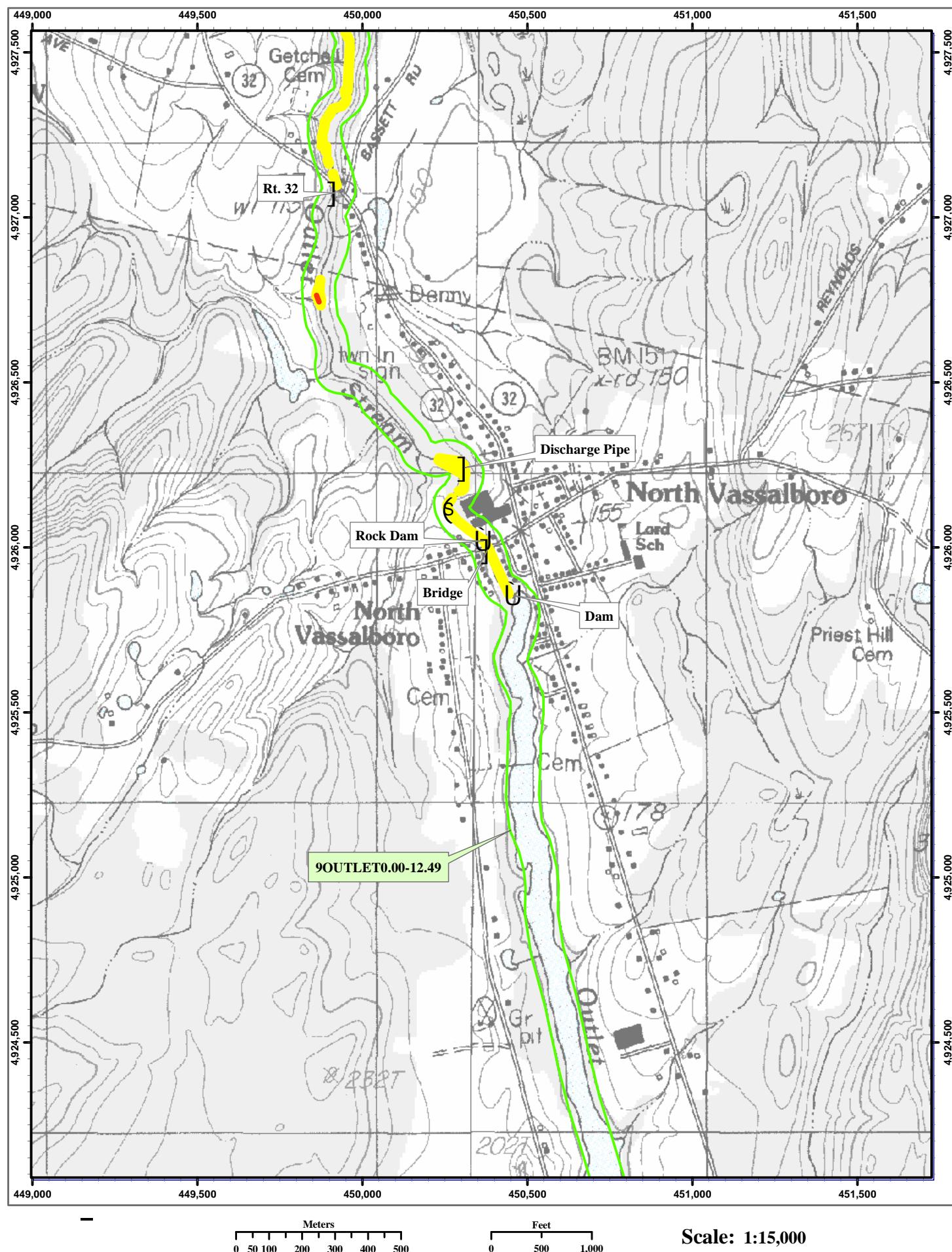
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Outlet Stream

Map 13



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

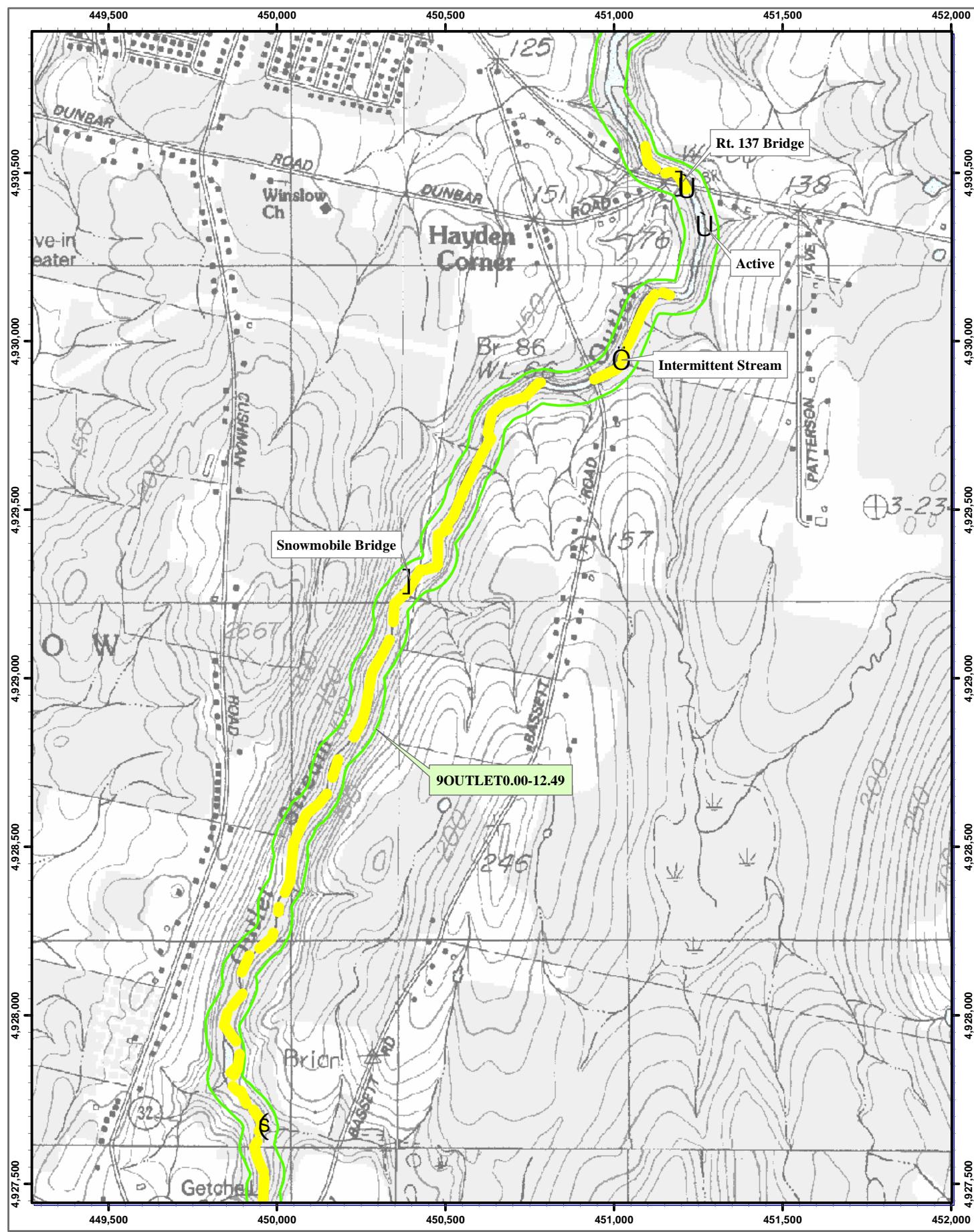
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Outlet Stream

Map 14



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

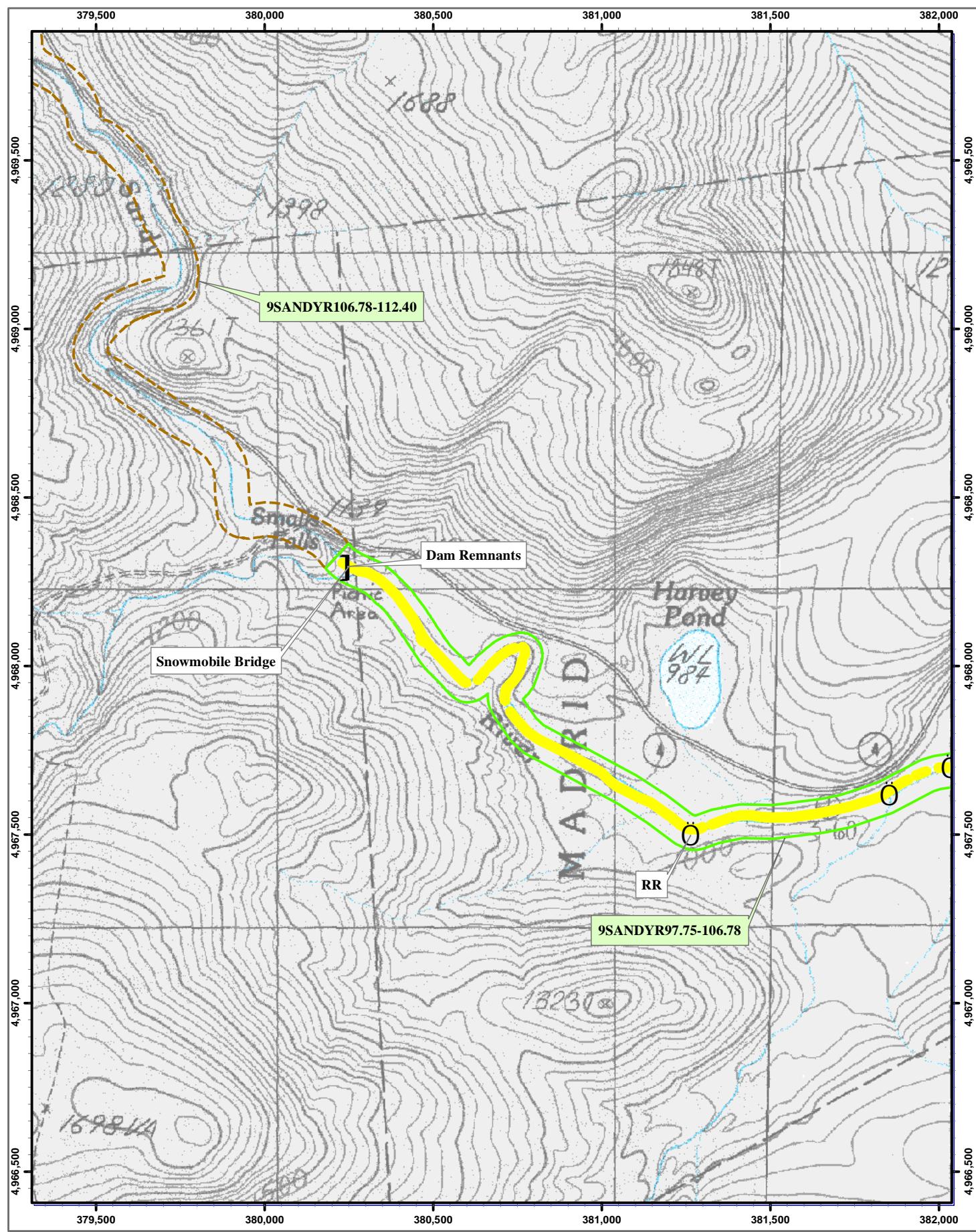
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Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 15



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

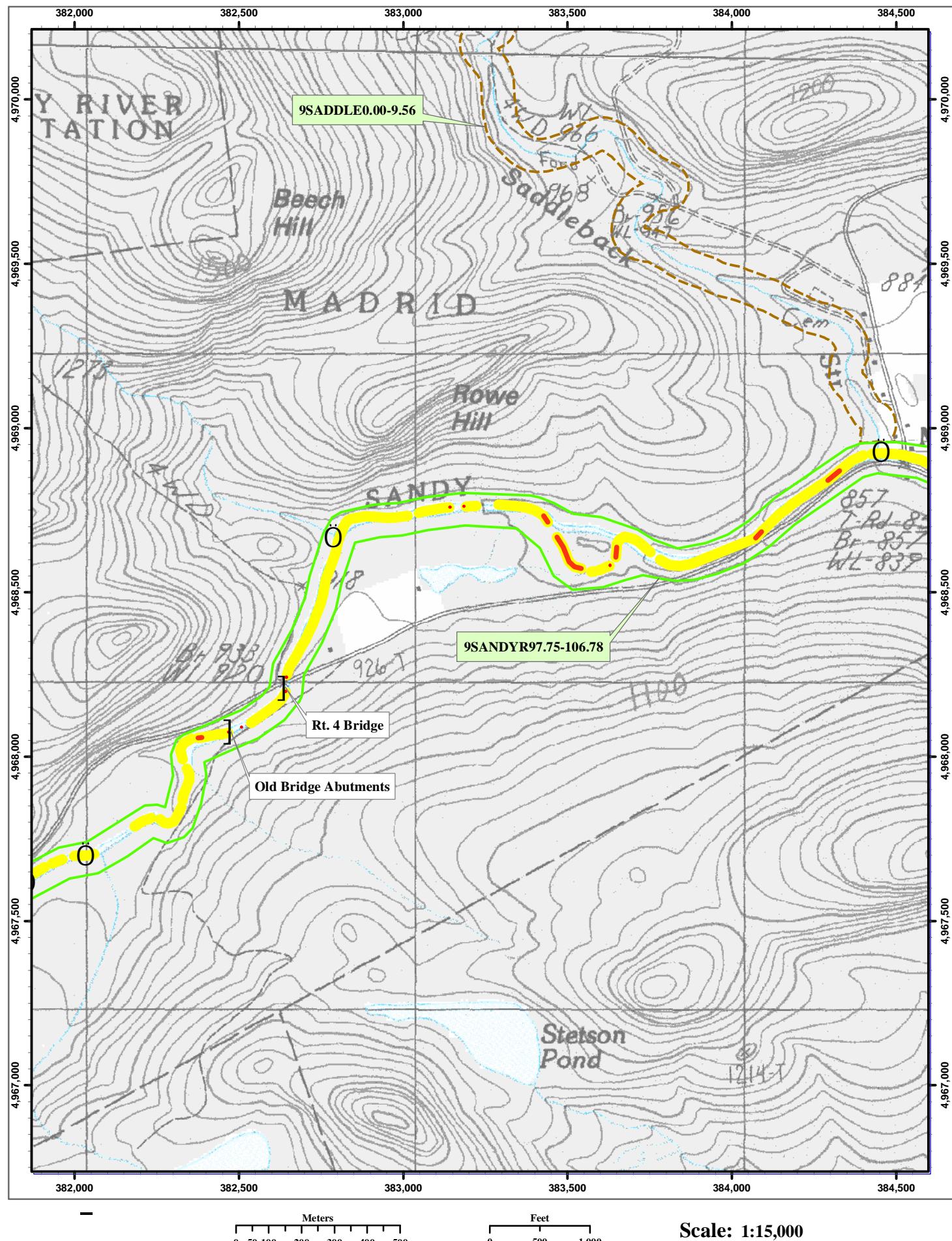
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 16



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

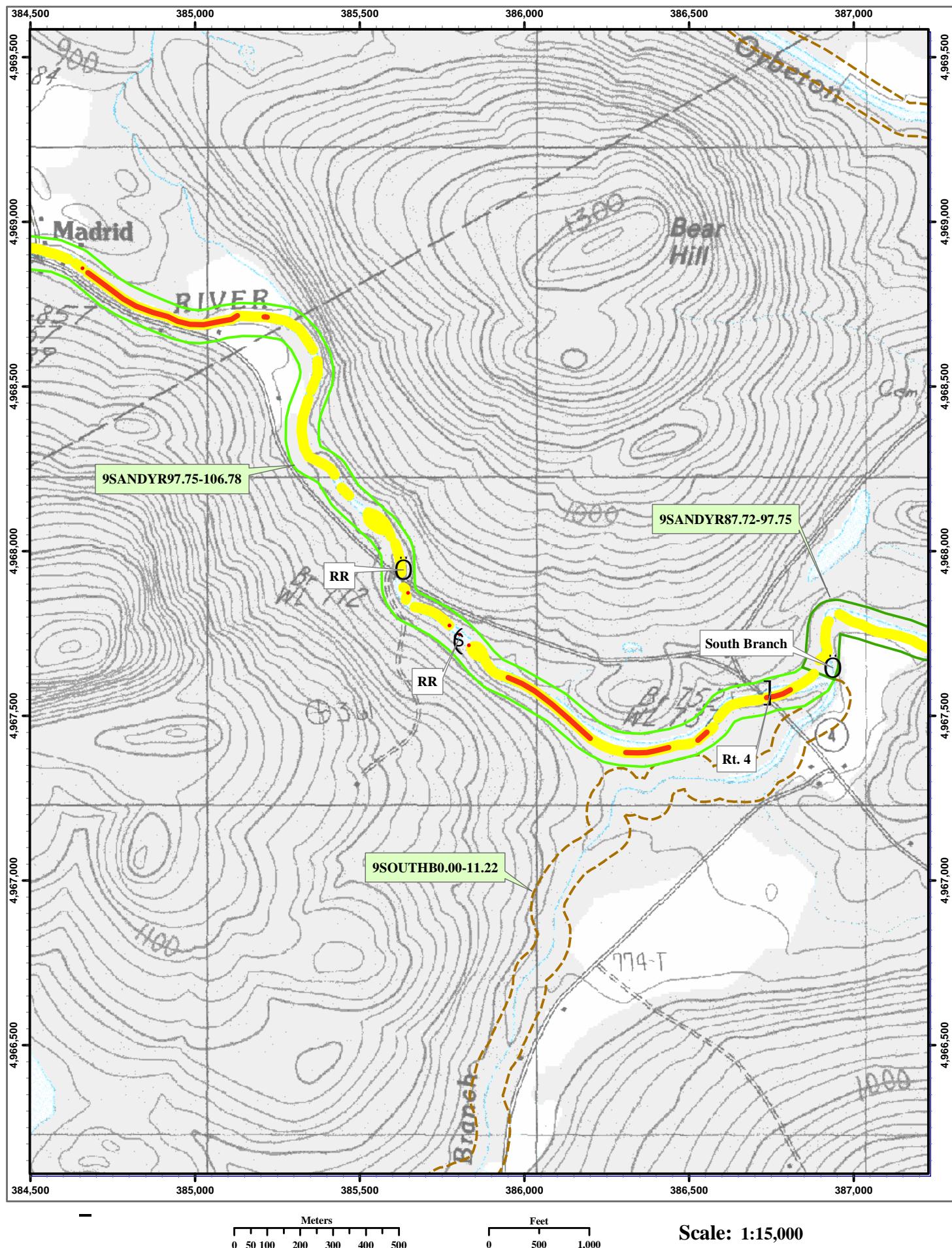
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Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 17



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

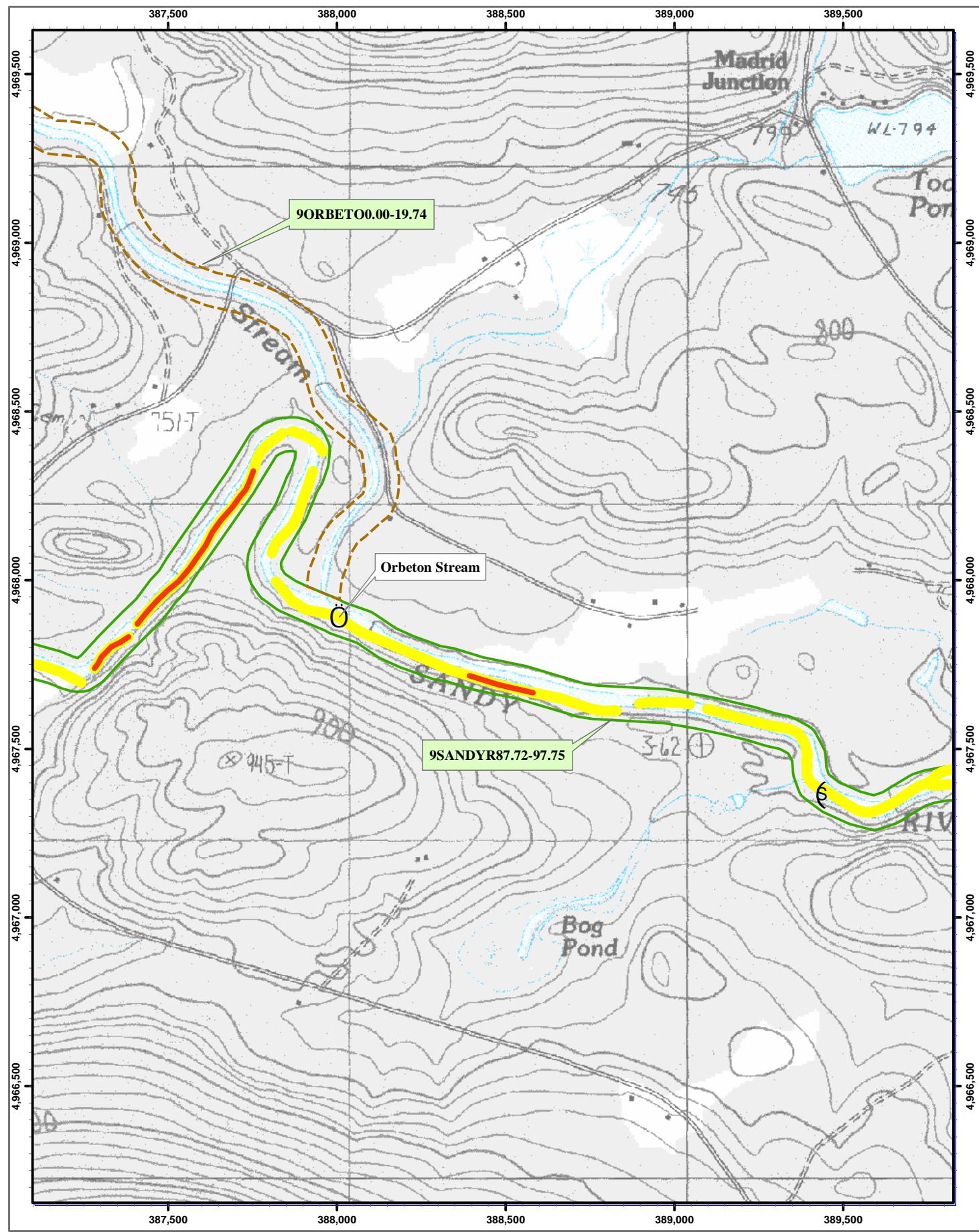
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Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 18



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

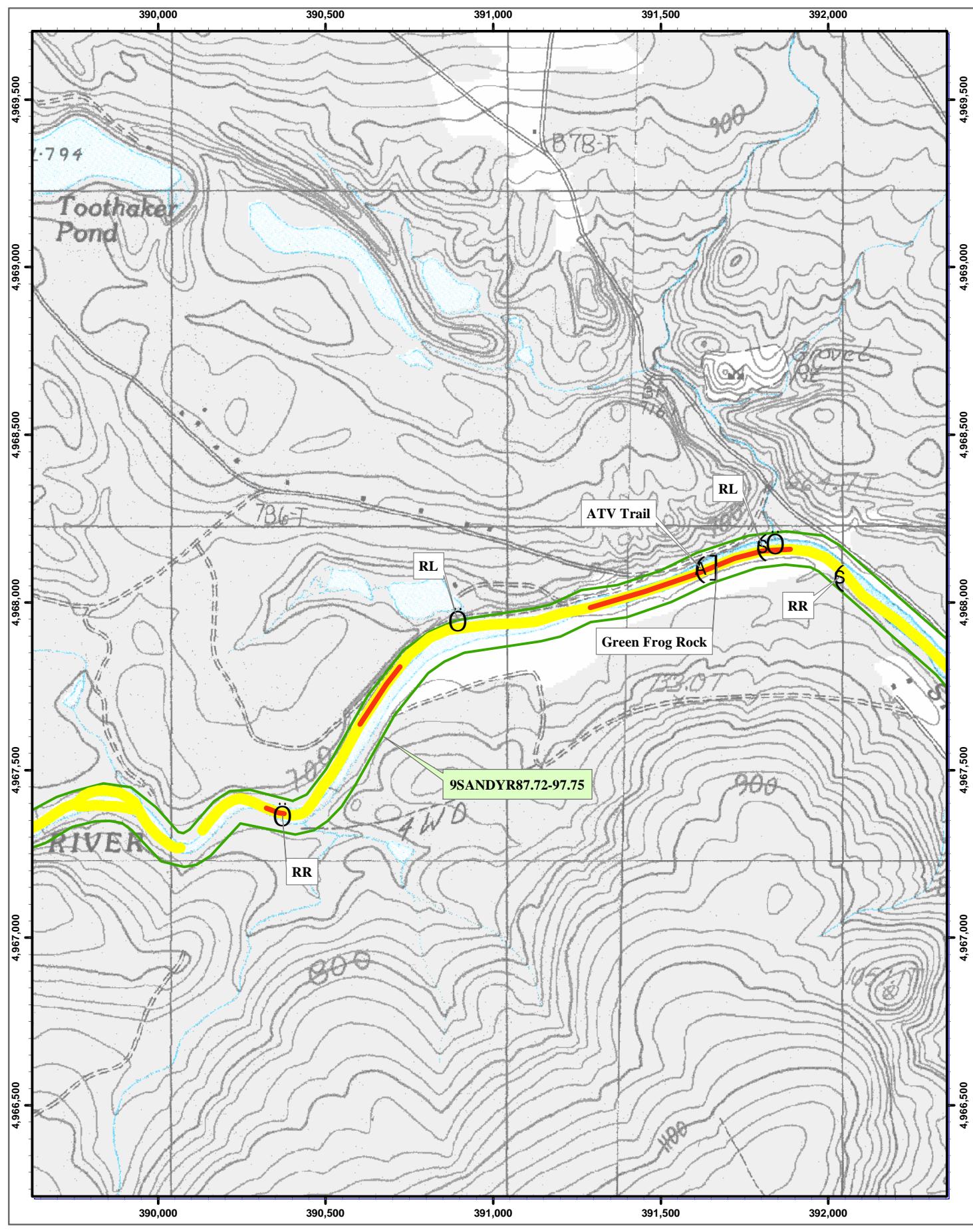
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 19



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

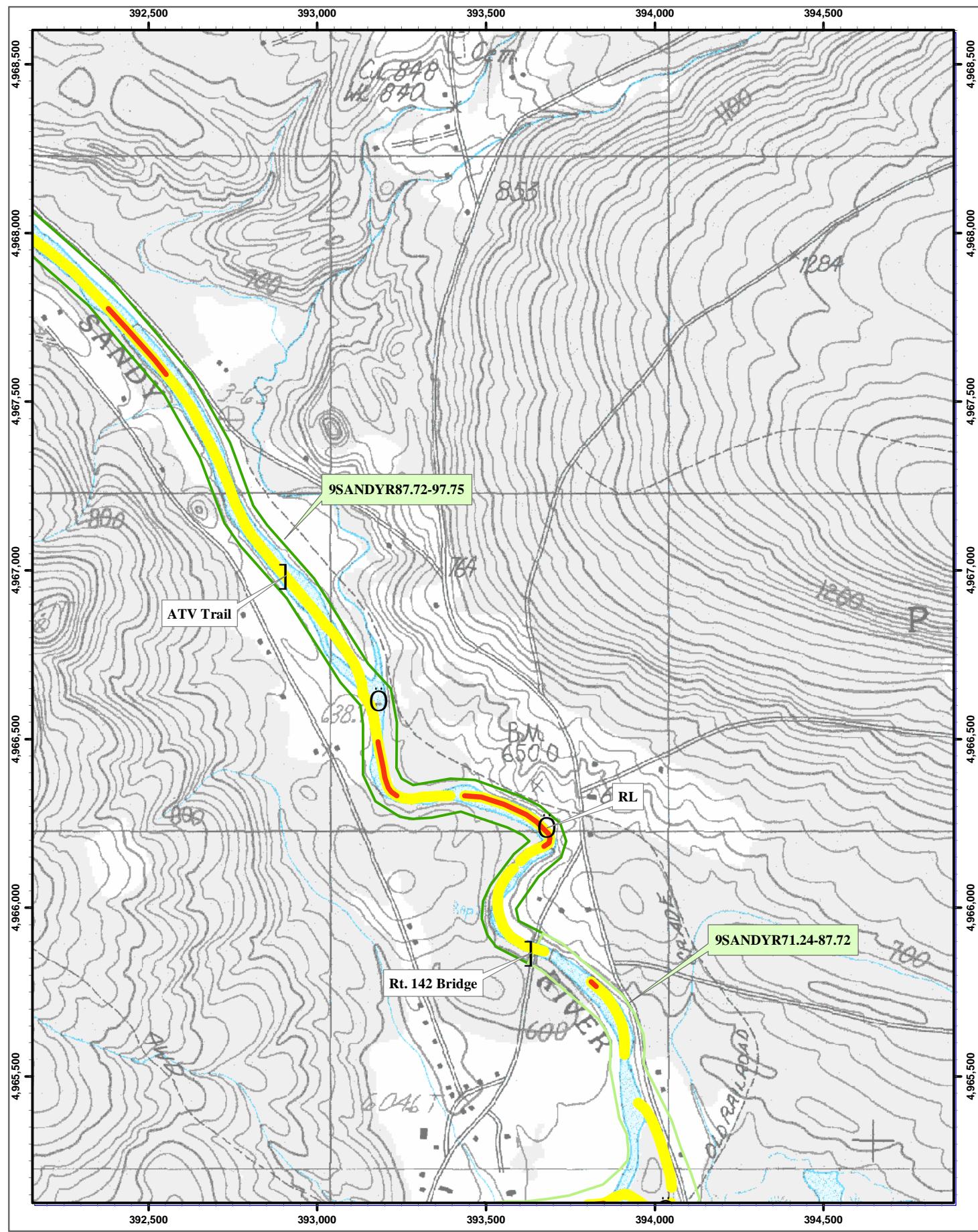
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 20



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

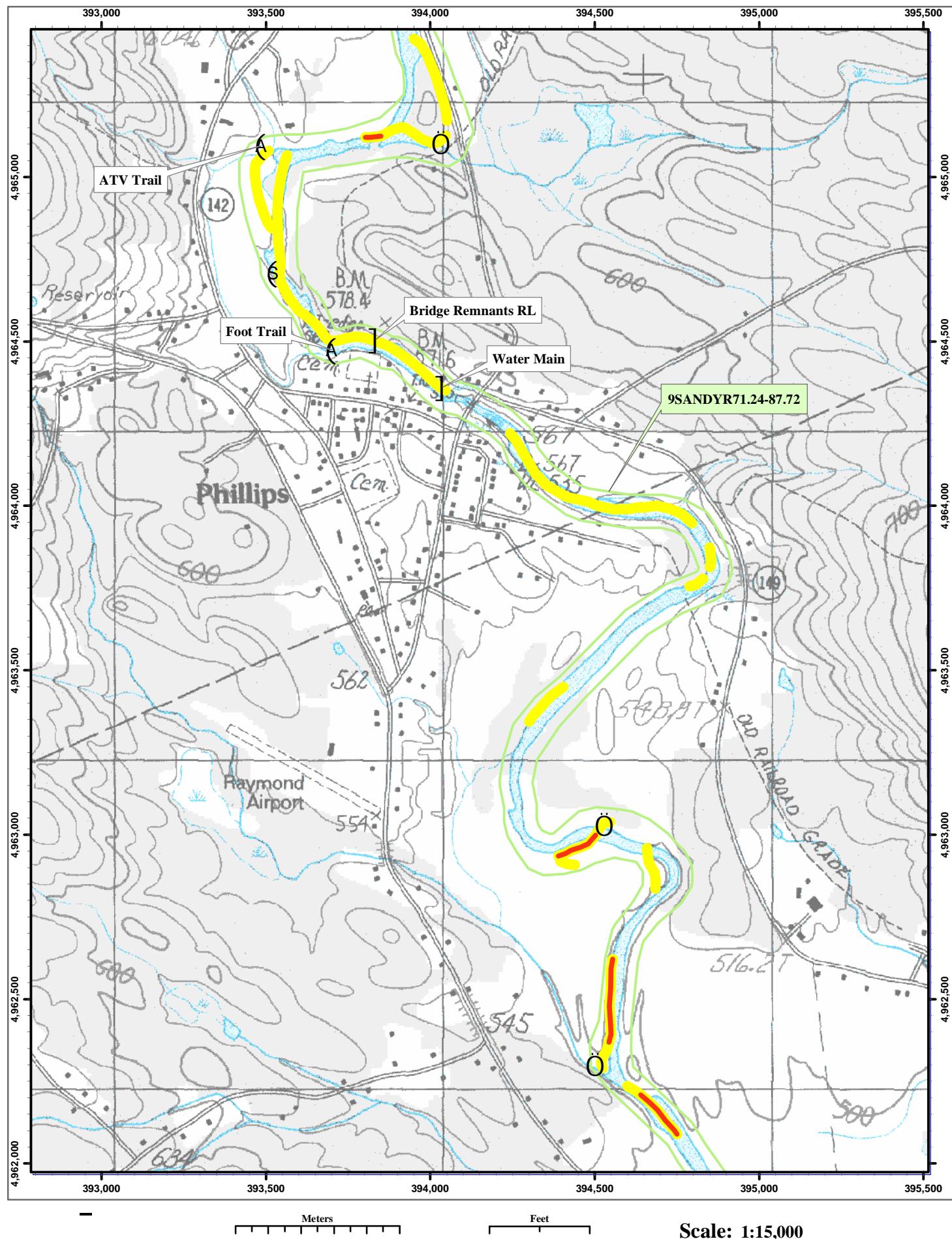
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 21



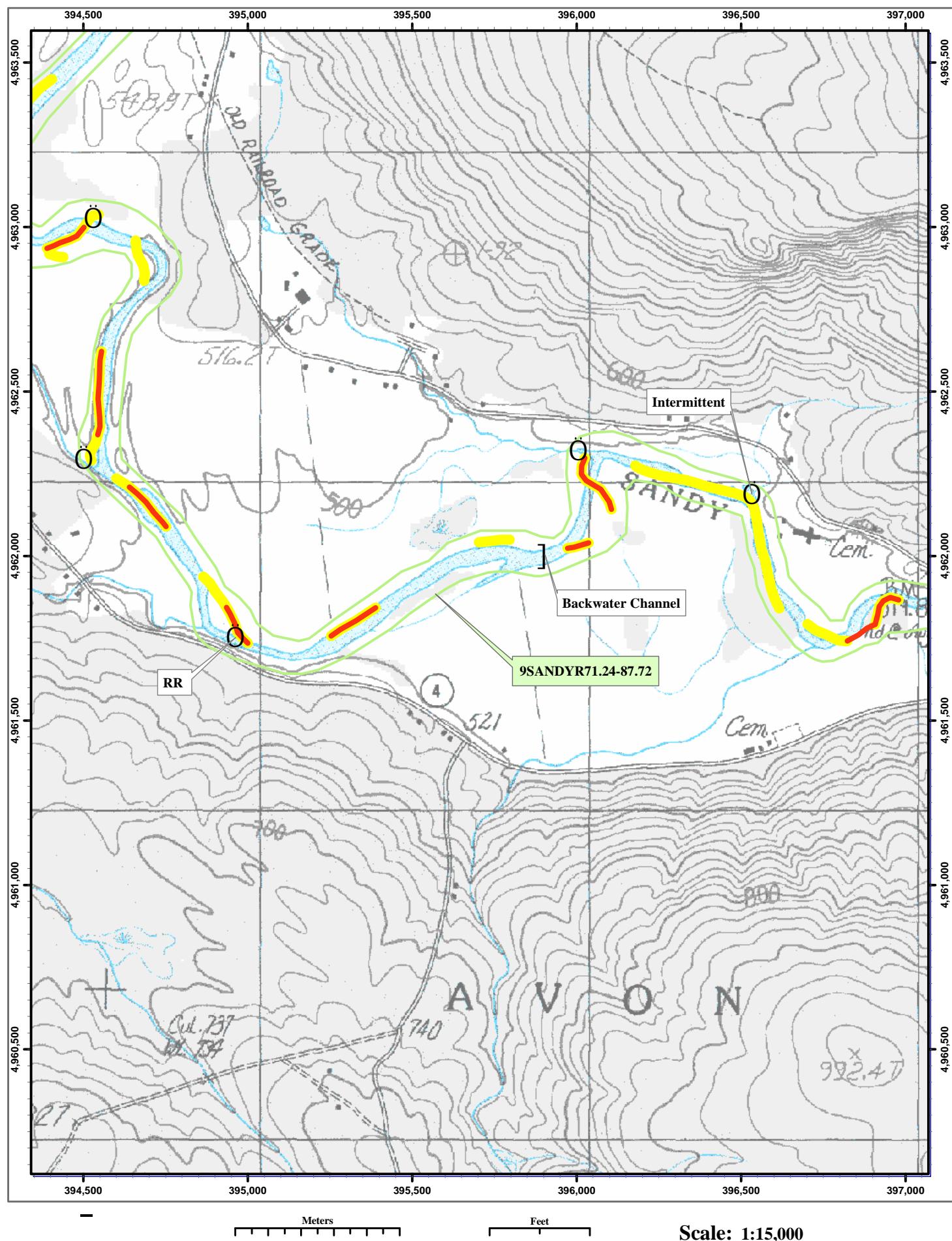
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 22



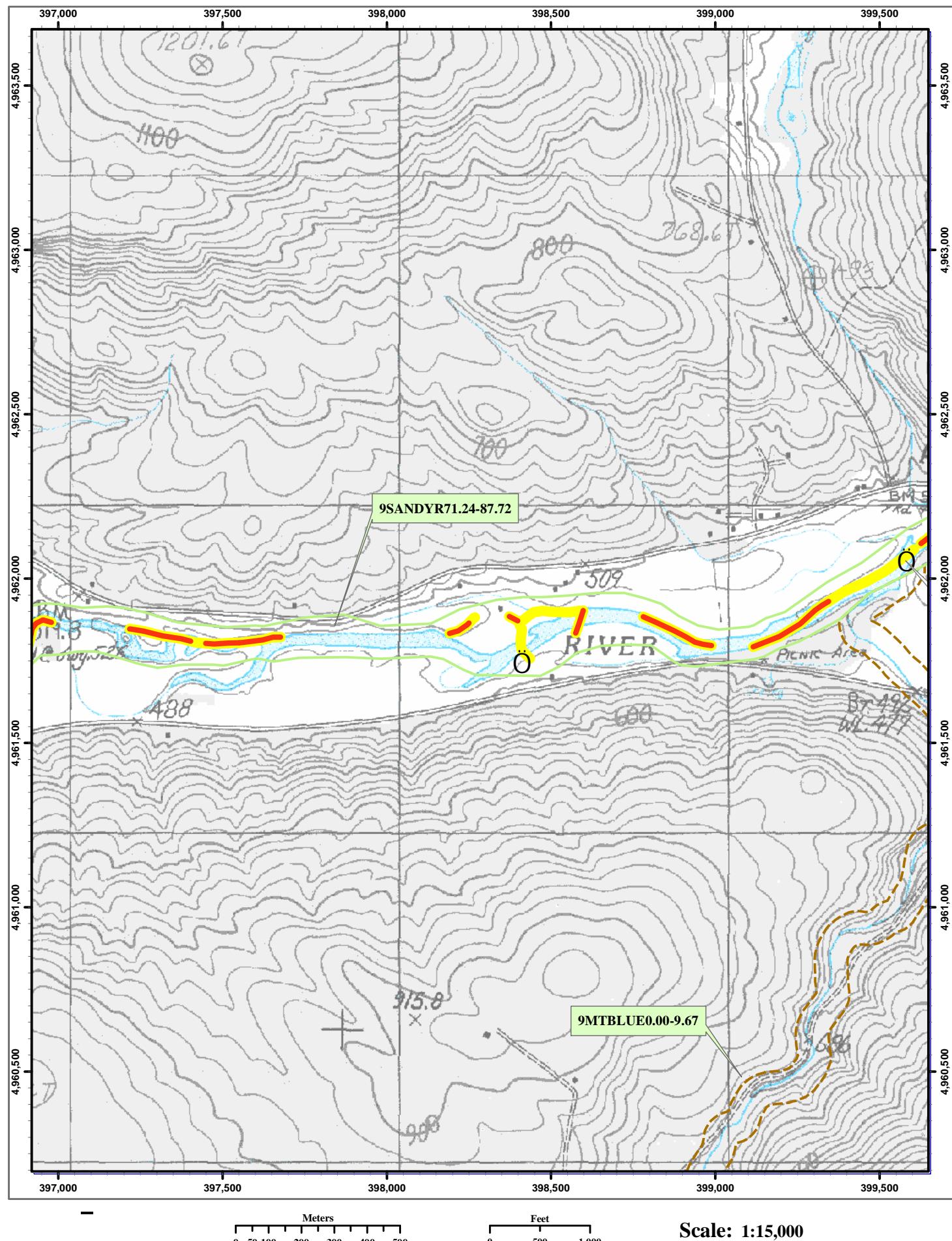
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Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 23



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

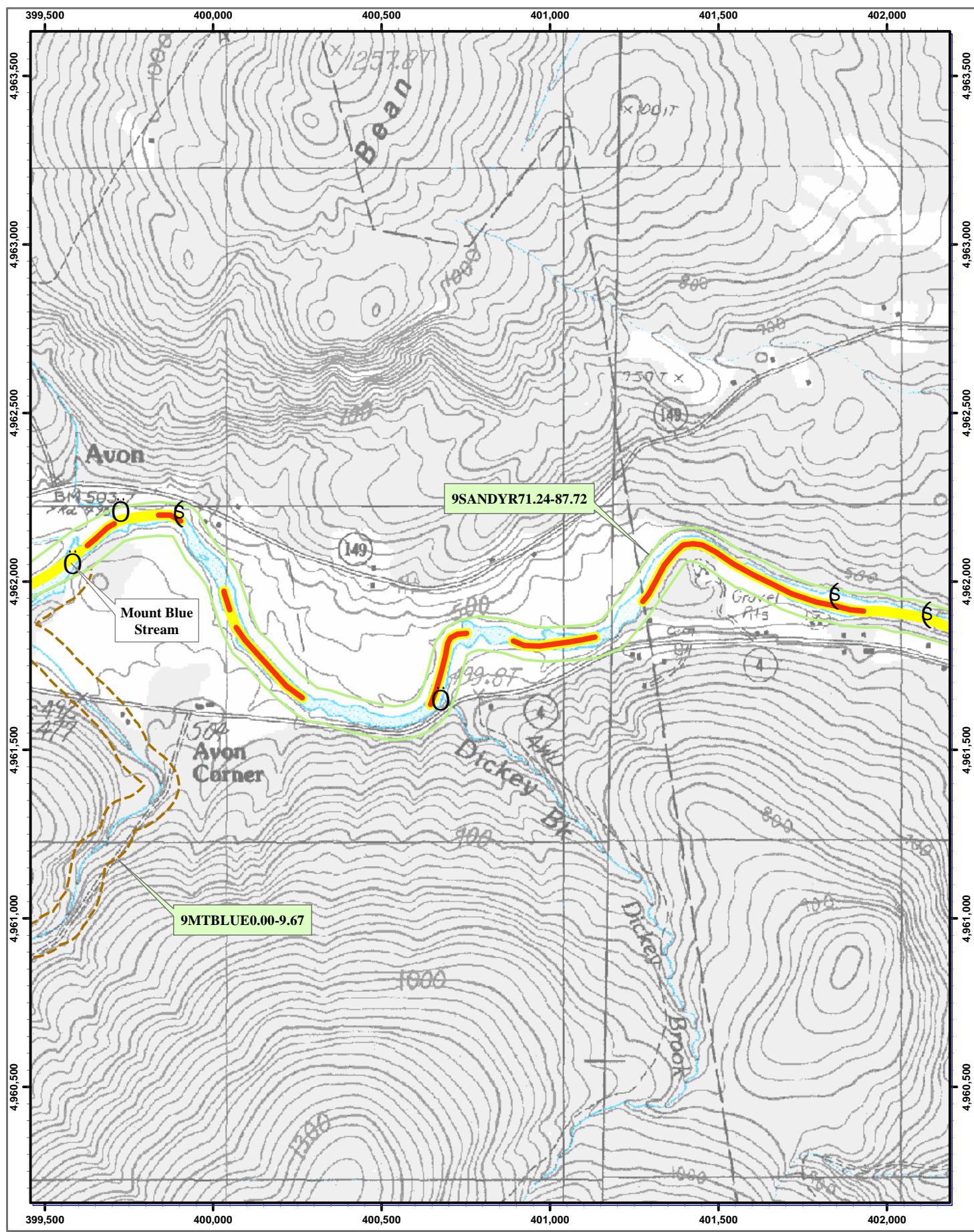
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 24



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

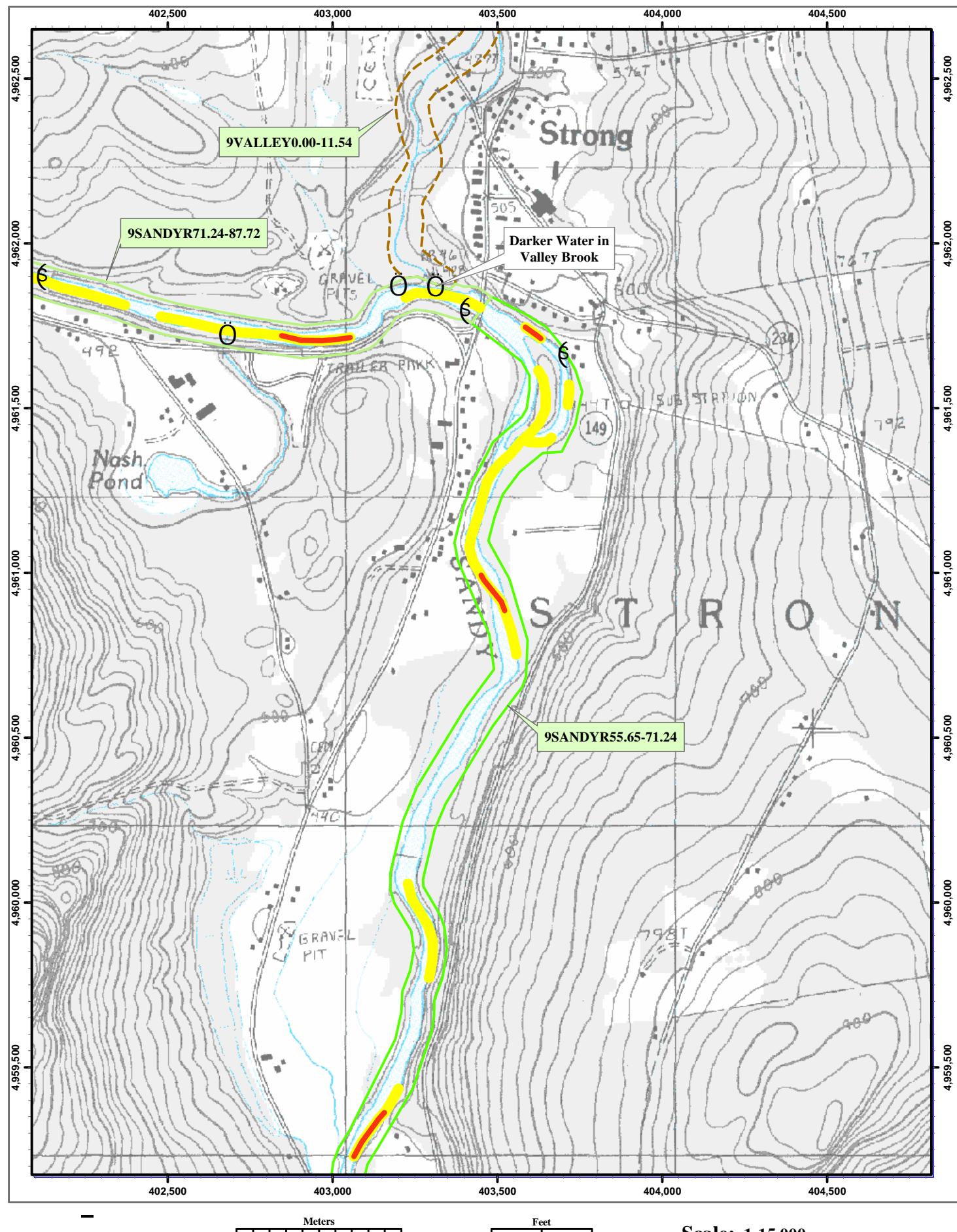
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

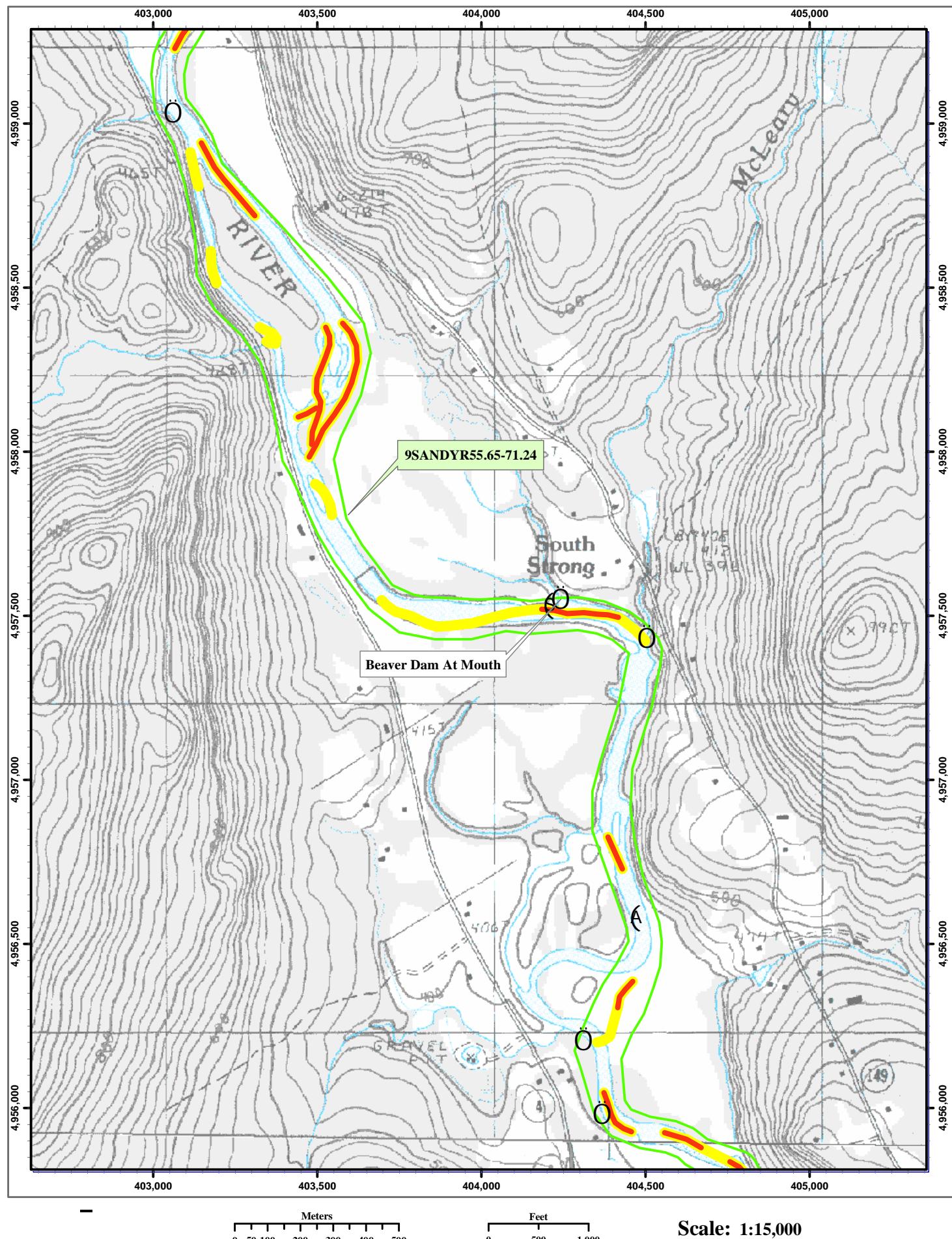
Map 25



Kennebec River

Sandy River

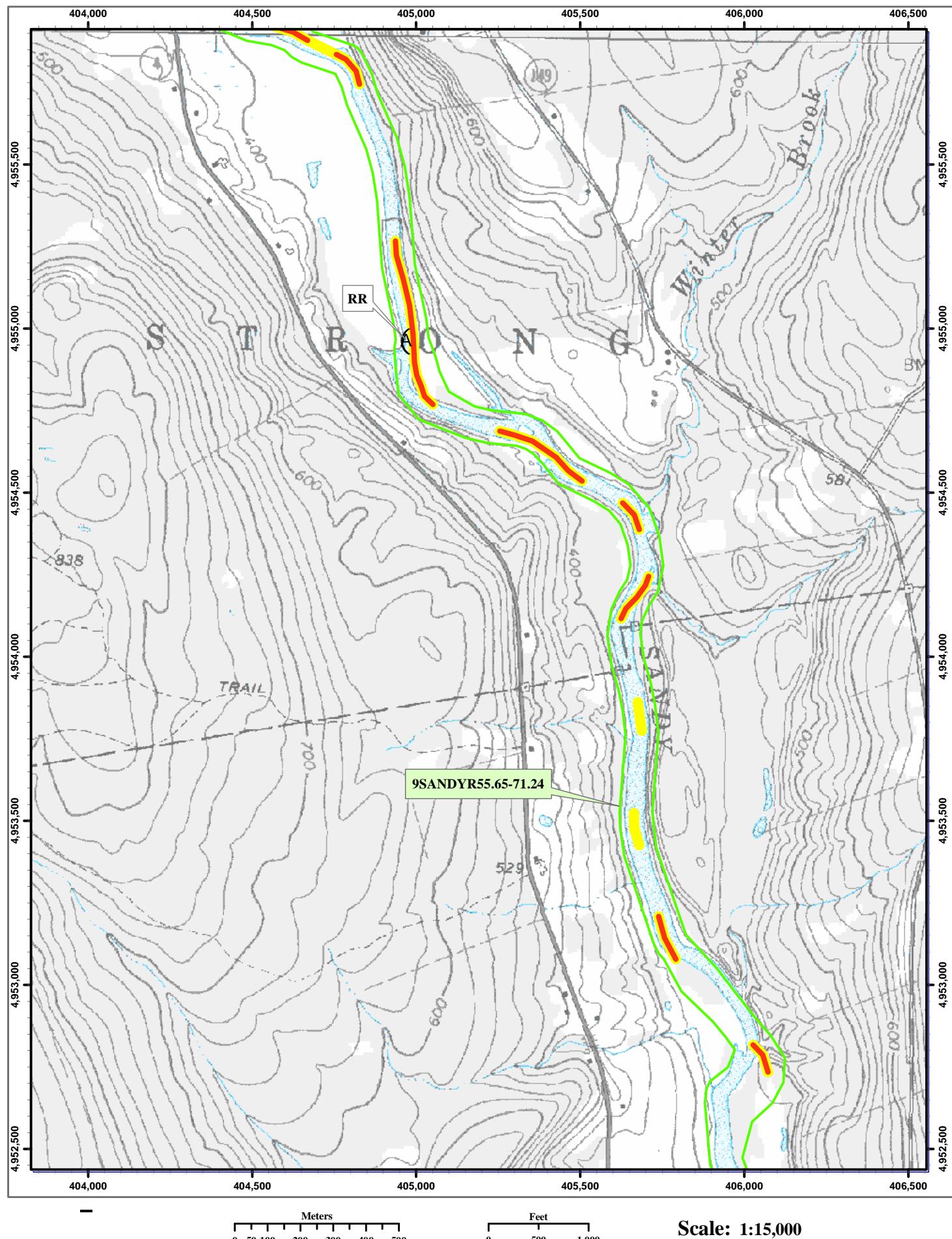
Map 26



Kennebec River

Sandy River

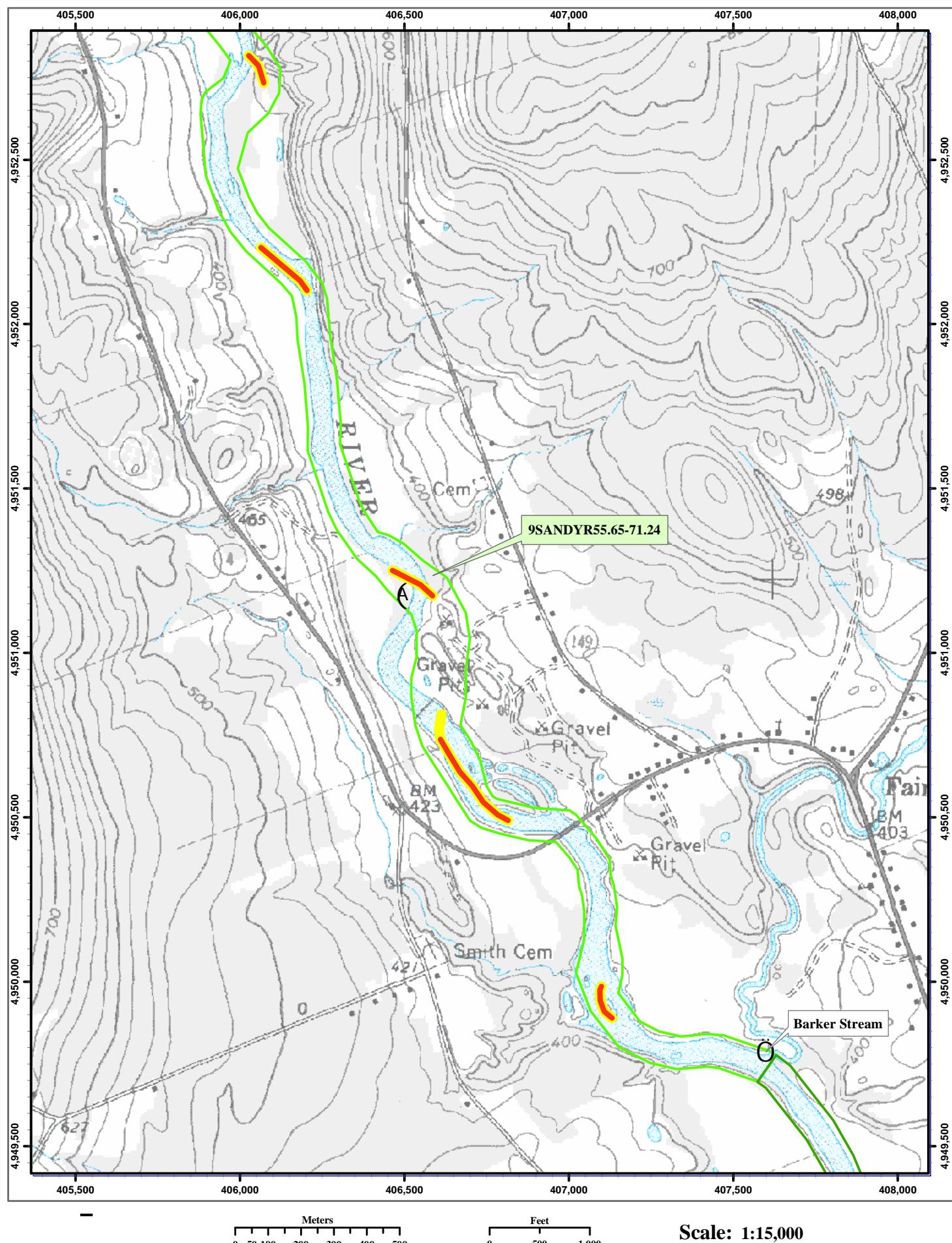
Map 27



Kennebec River

Sandy River

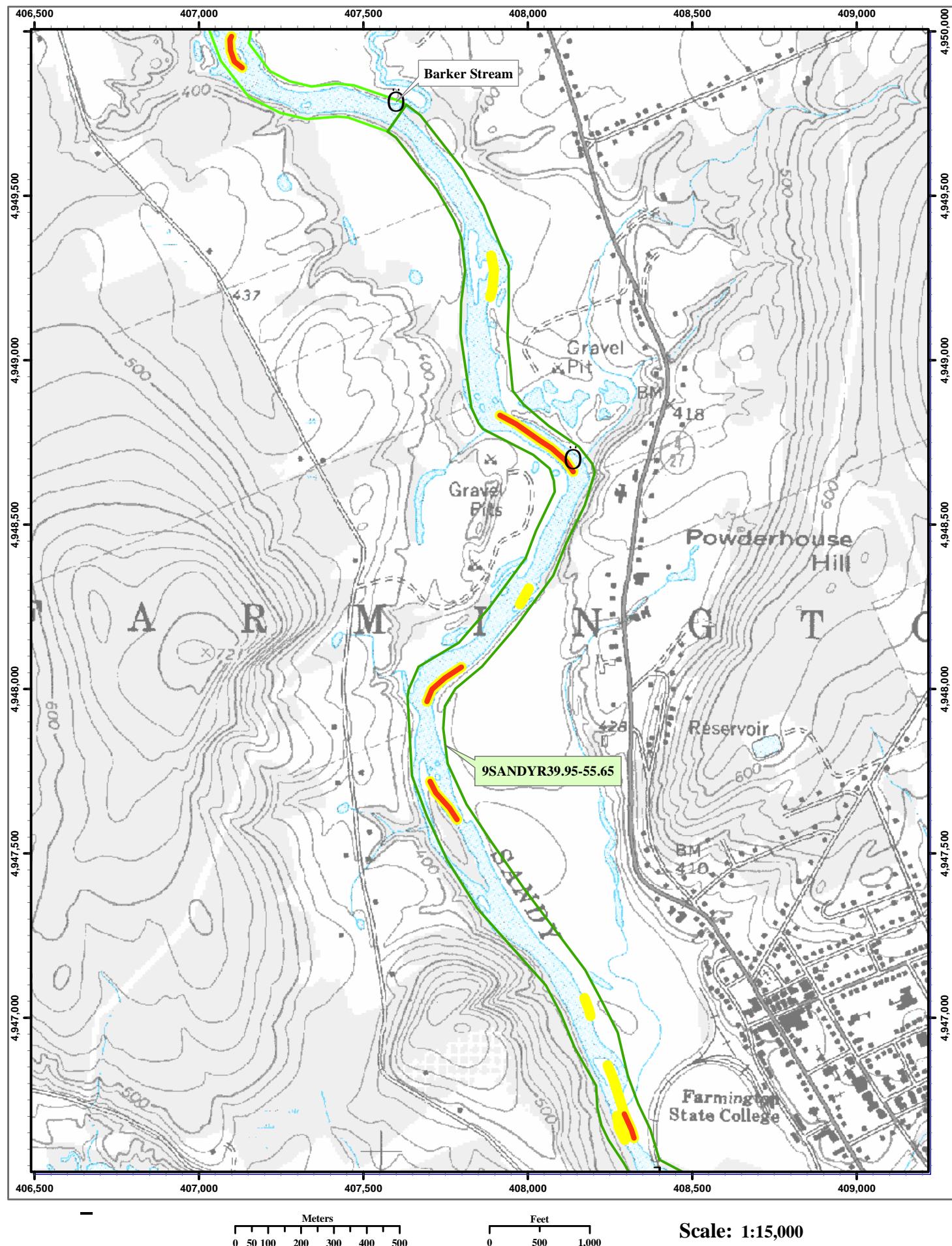
Map 28



Kennebec River

Sandy River

Map 29



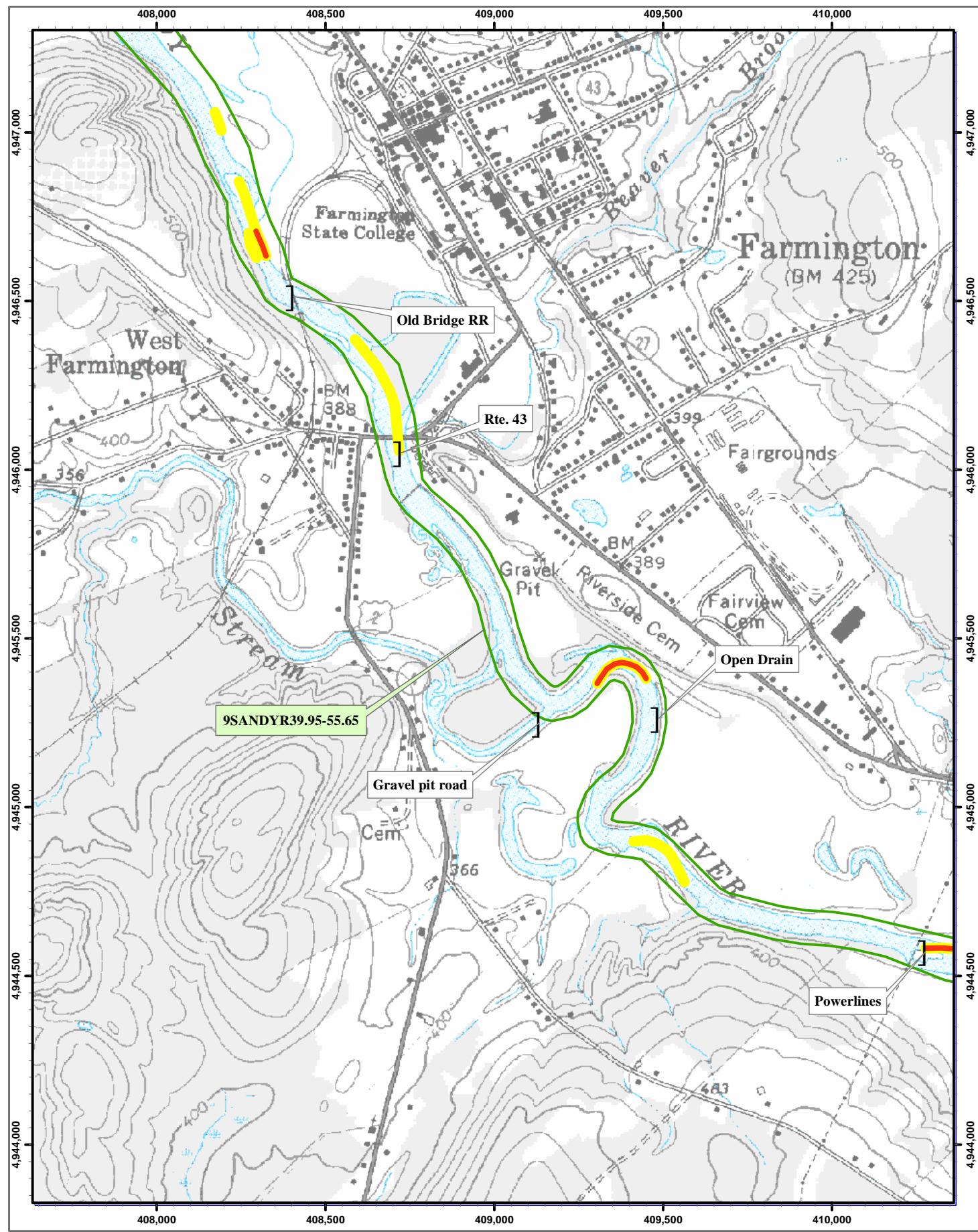
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 30



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

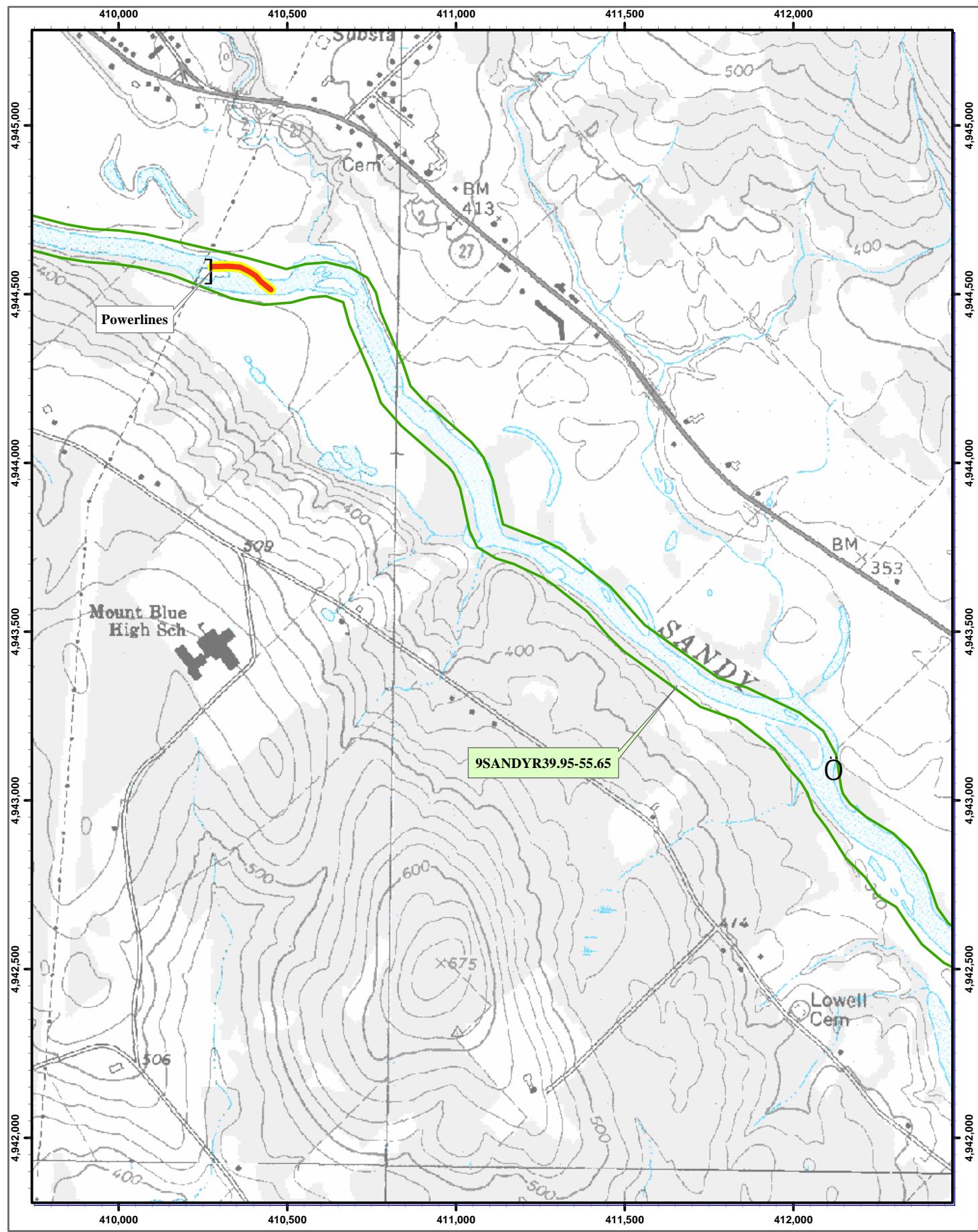
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 31



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

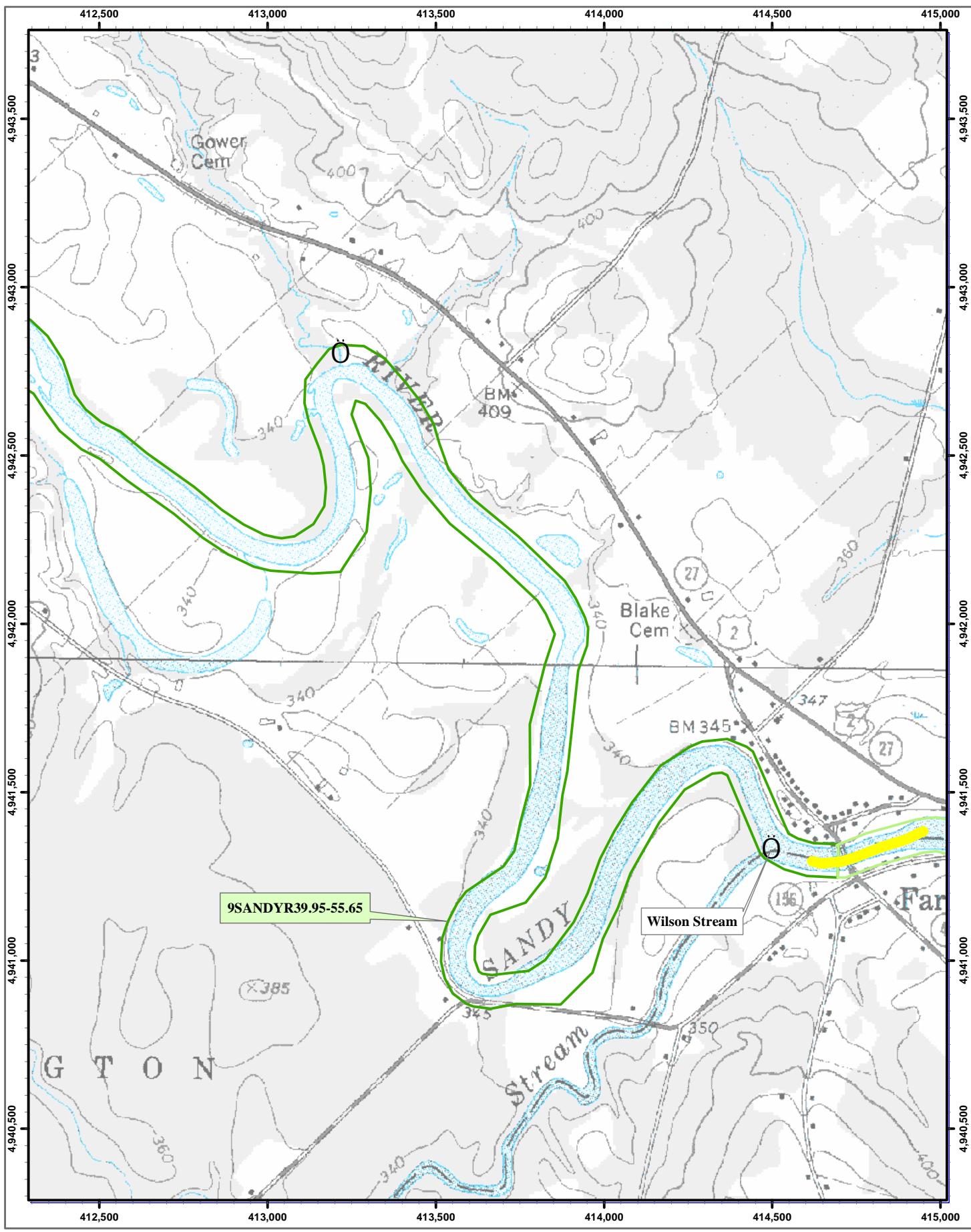
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 32



Meters

A horizontal number line with tick marks at intervals of 50, ranging from 0 to 500.

Value
0
50
100
200
300
400
500

1

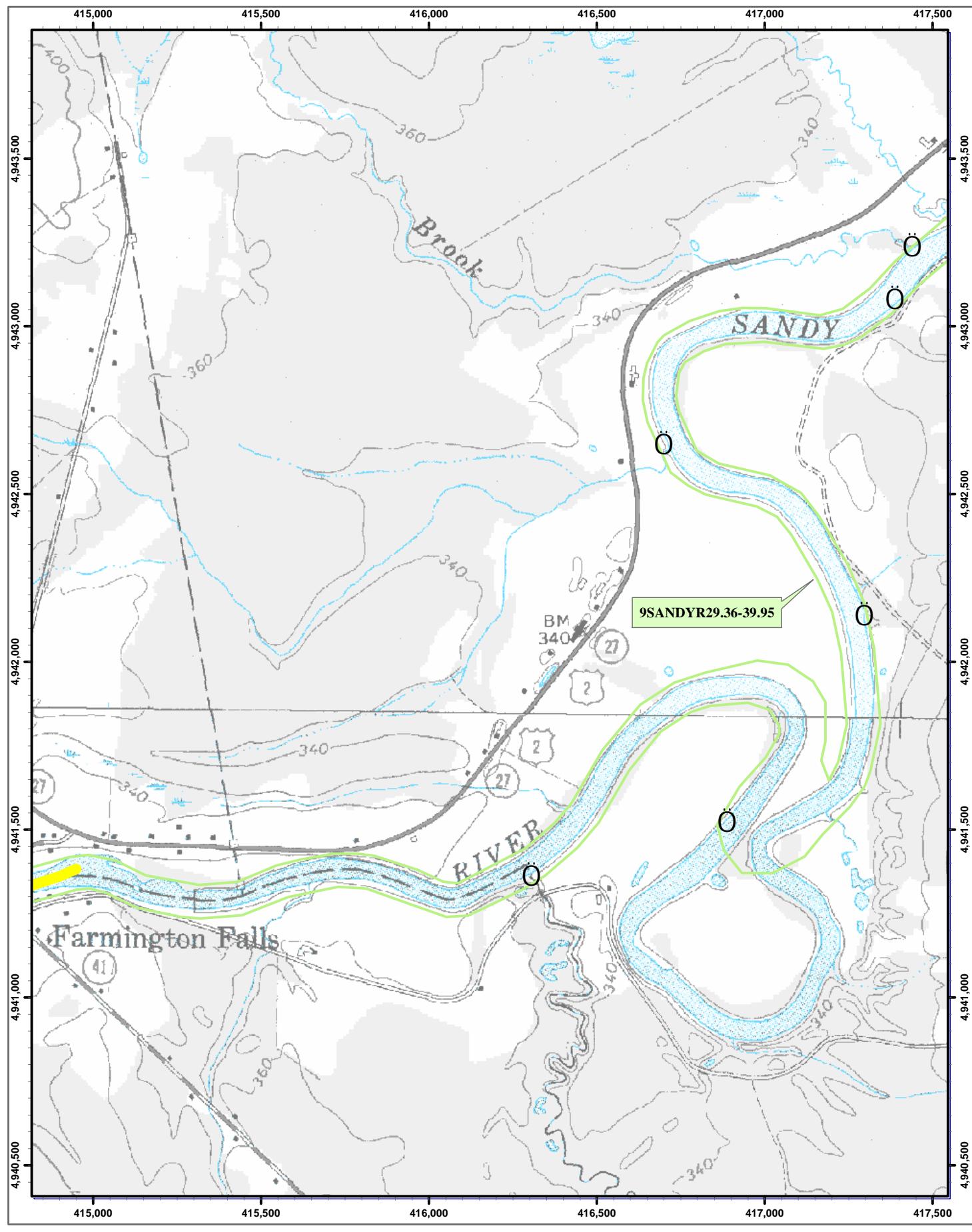
0 500 1,000

Scale: 1:15,000

Kennebec River

Sandy River

Map 33



Meters

0 50 100 200 300 400 500

Feet

0 500 1,000

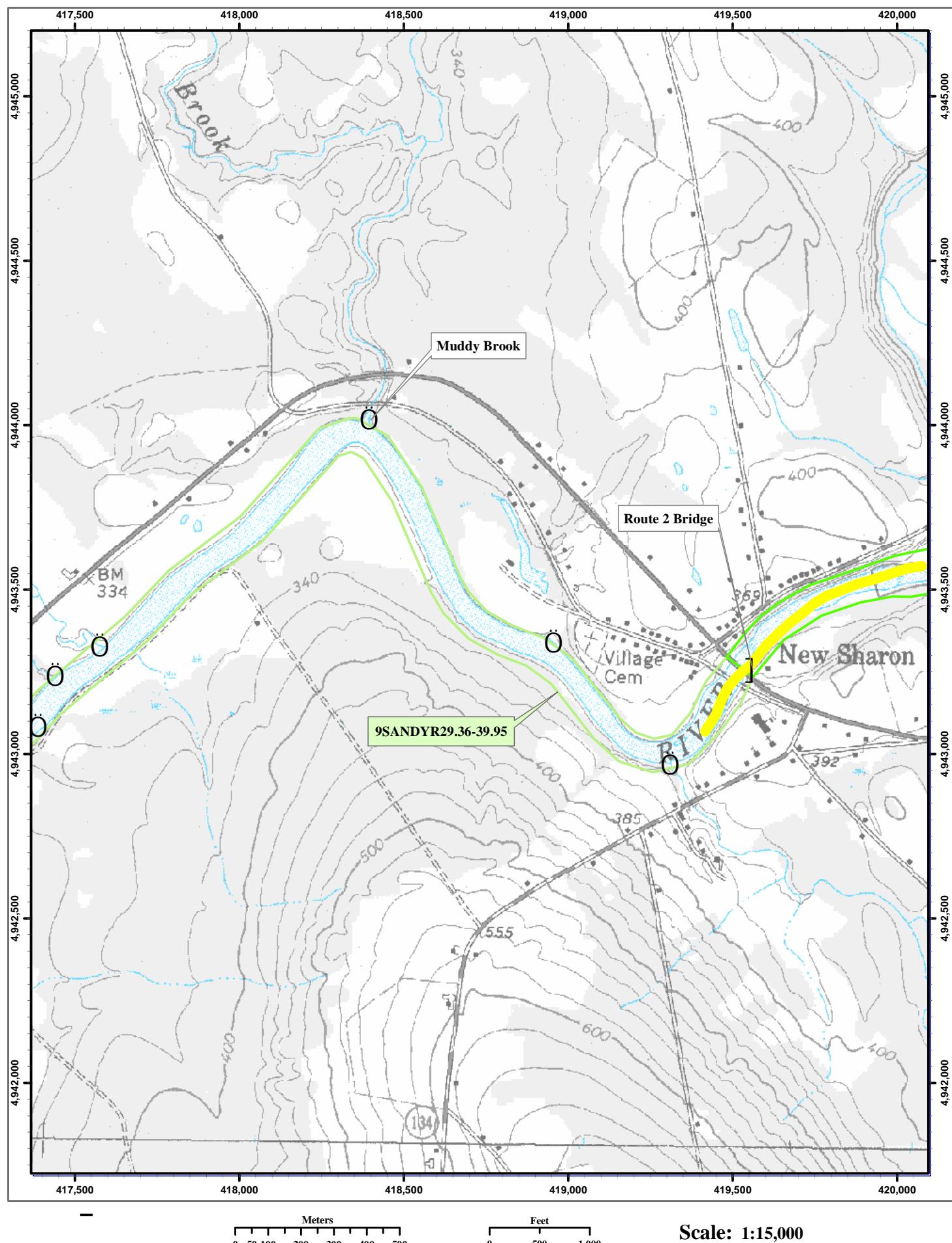
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 34



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

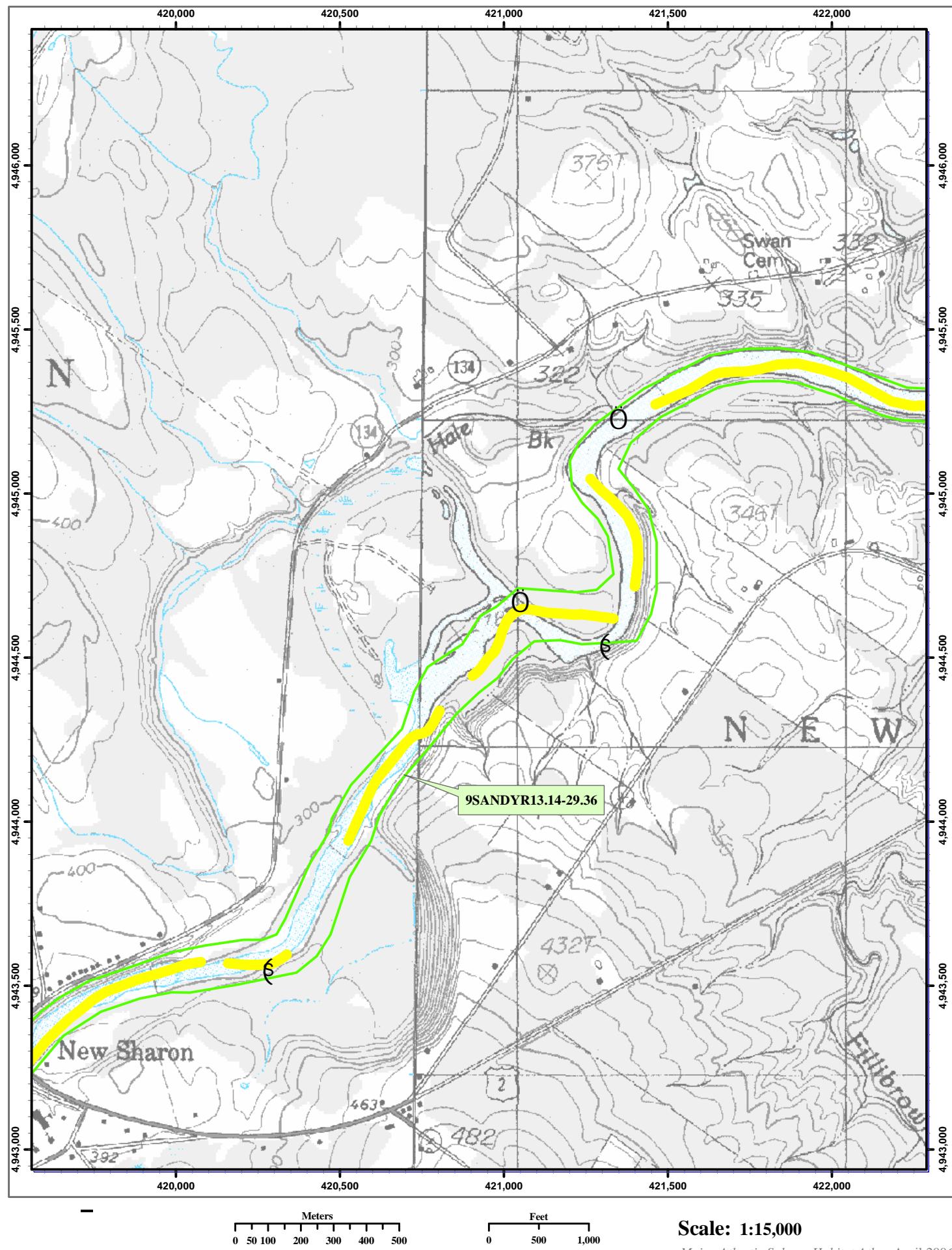
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

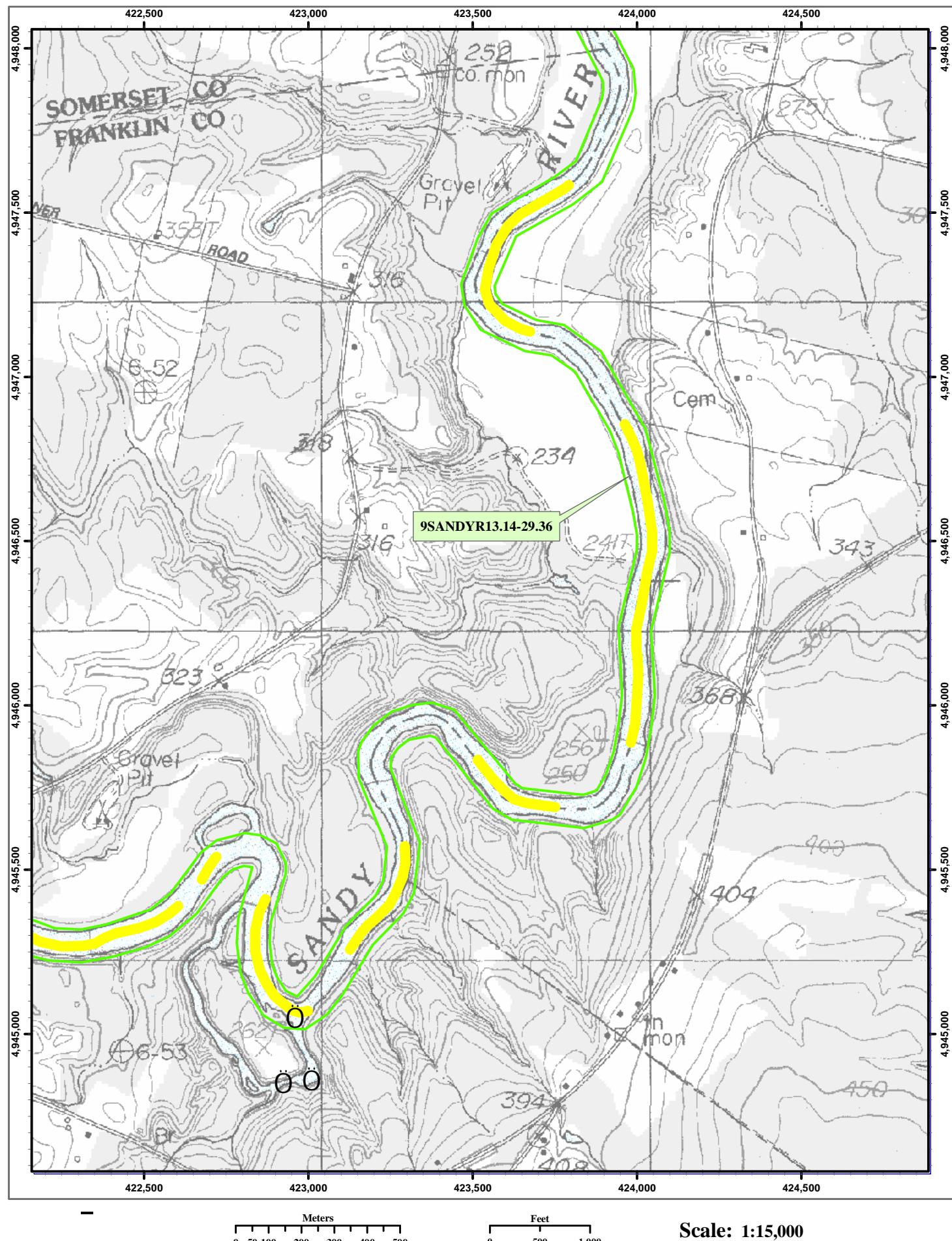
Map 35



Kennebec River

Sandy River

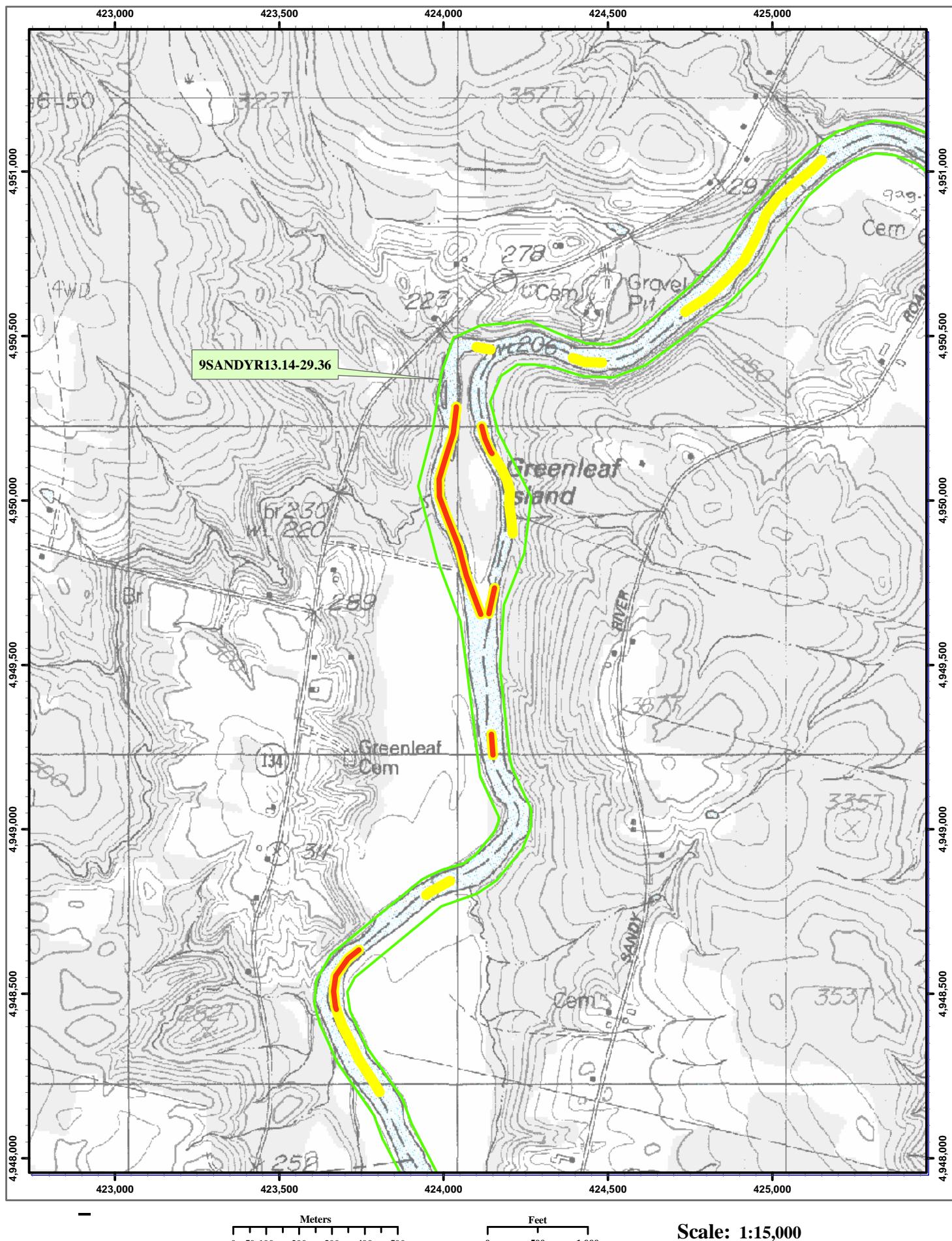
Map 36



Kennebec River

Sandy River

Map 37



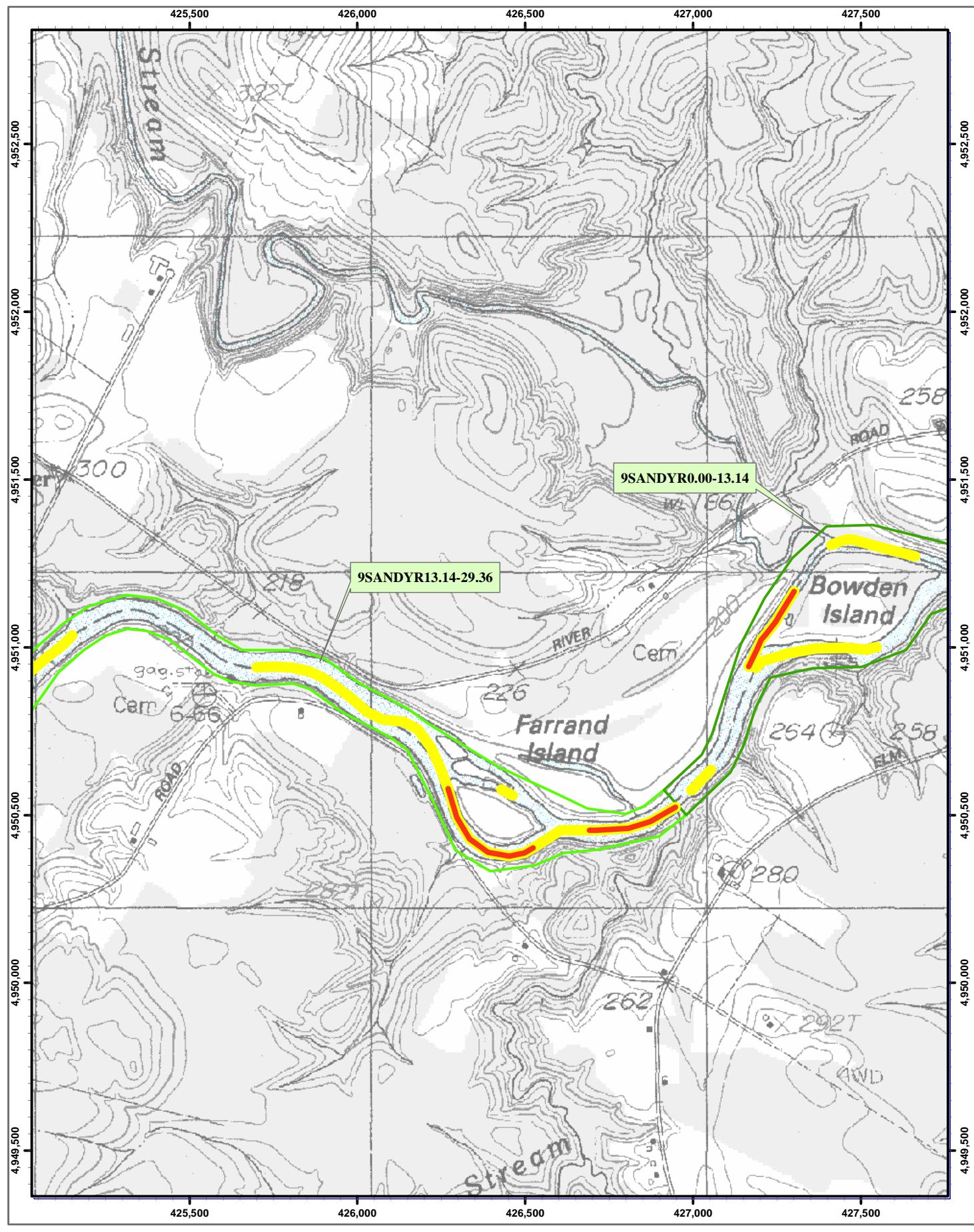
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 38



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

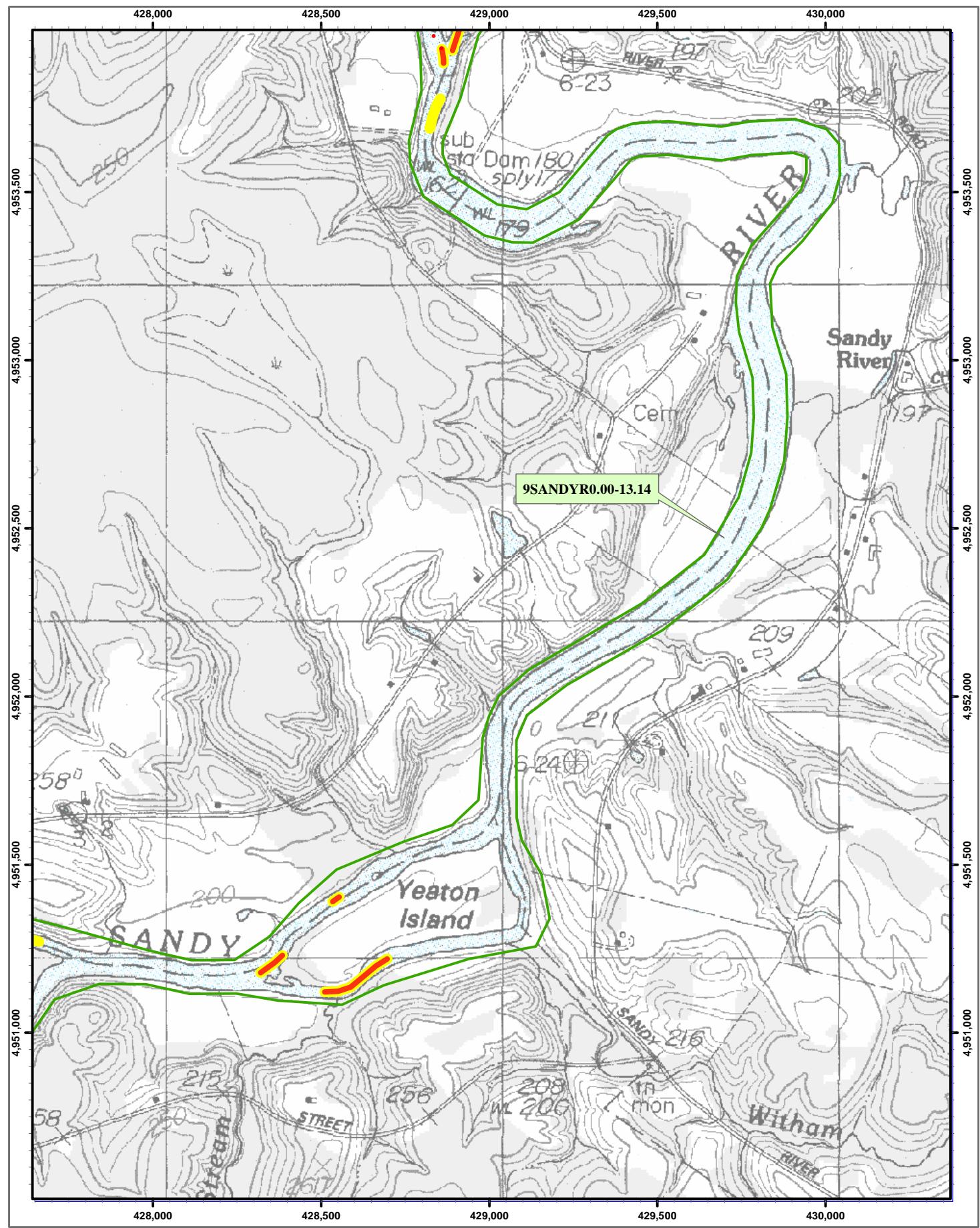
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

Map 39



Meters
0 50 100 200 300 400 500

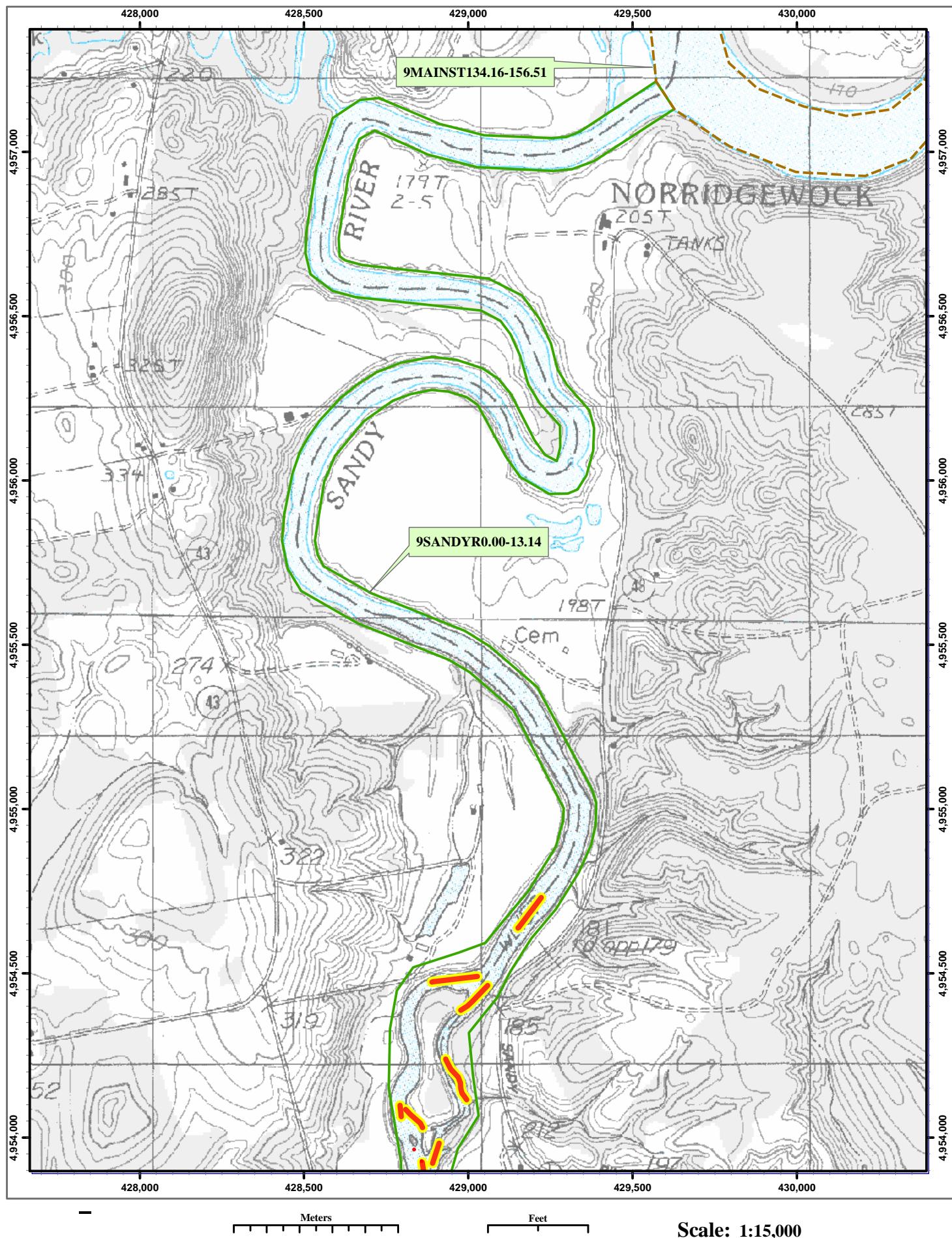
Feet
0 500 1,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sandy River

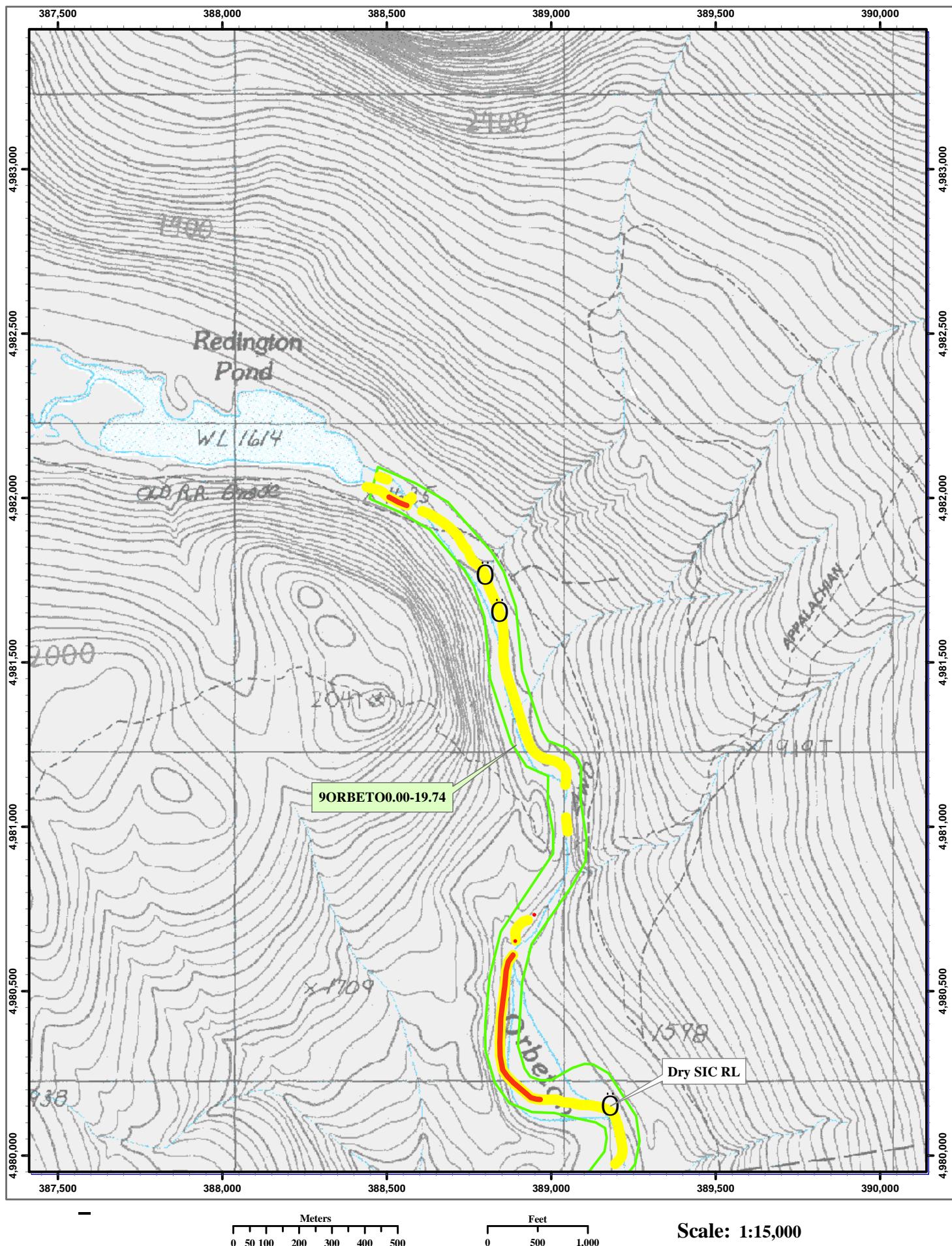
Map 40



Kennebec River

Orbeton Stream

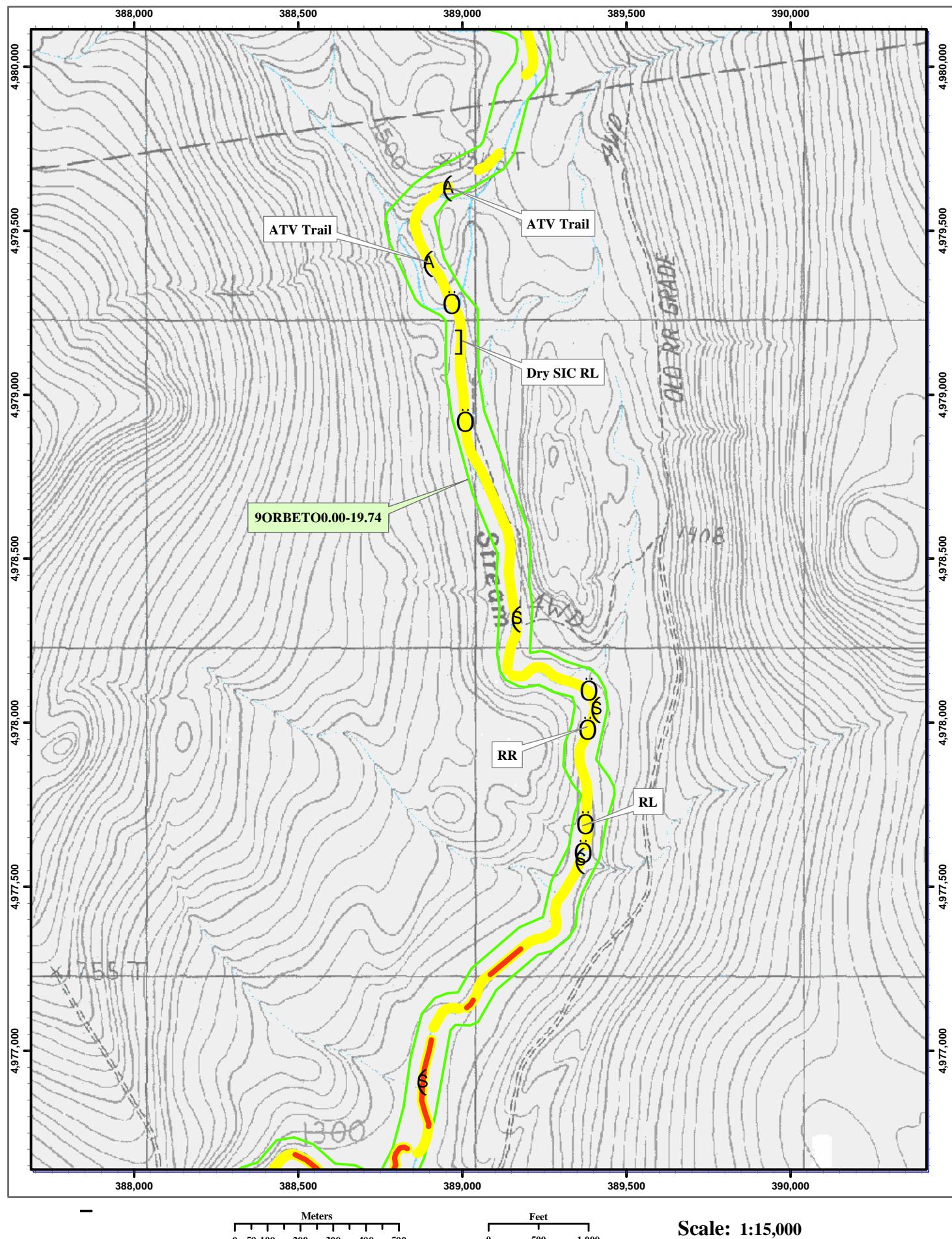
Map 41



Kennebec River

Orbeton Stream

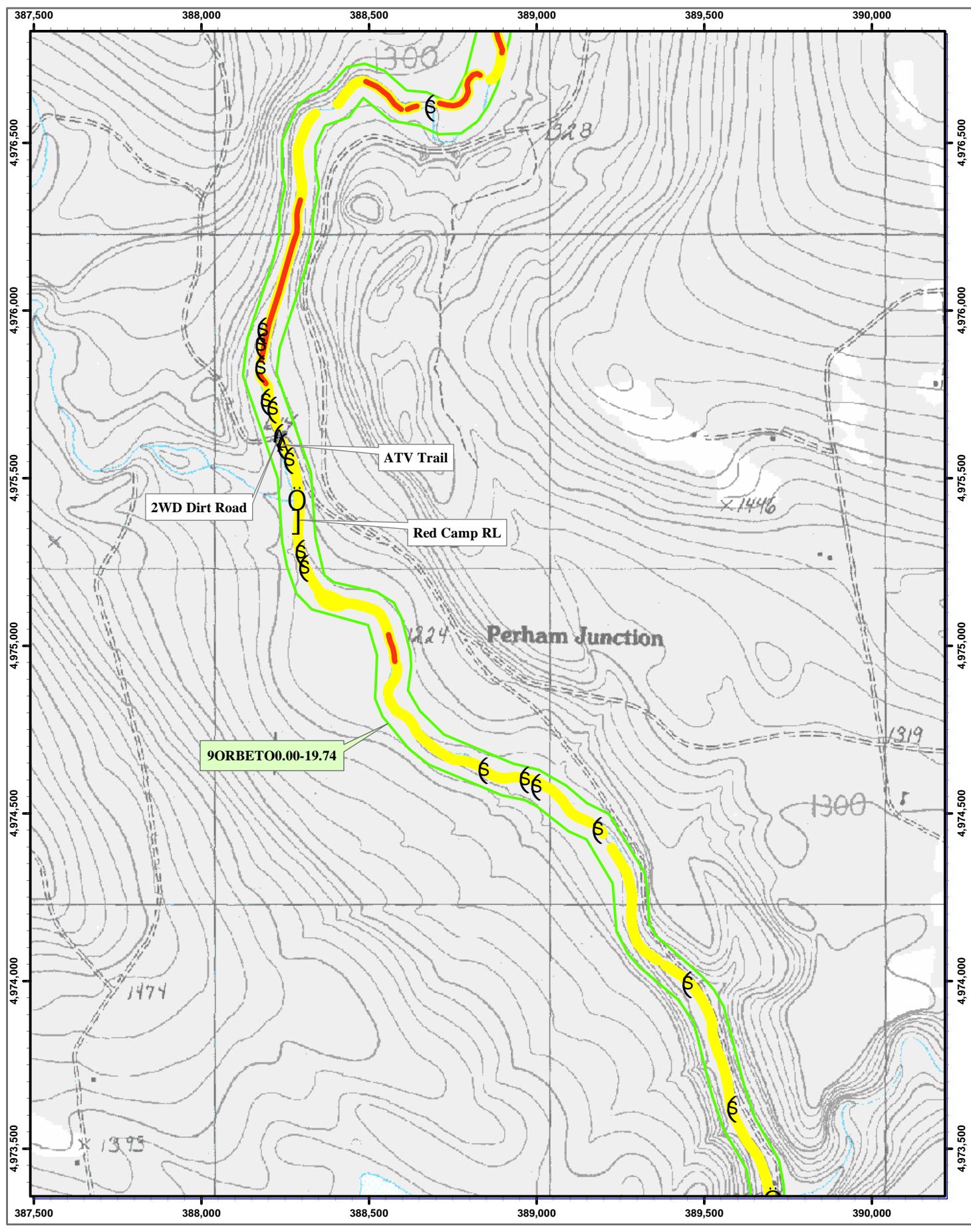
Map 42



Kennebec River

Orbeton Stream

Map 43



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

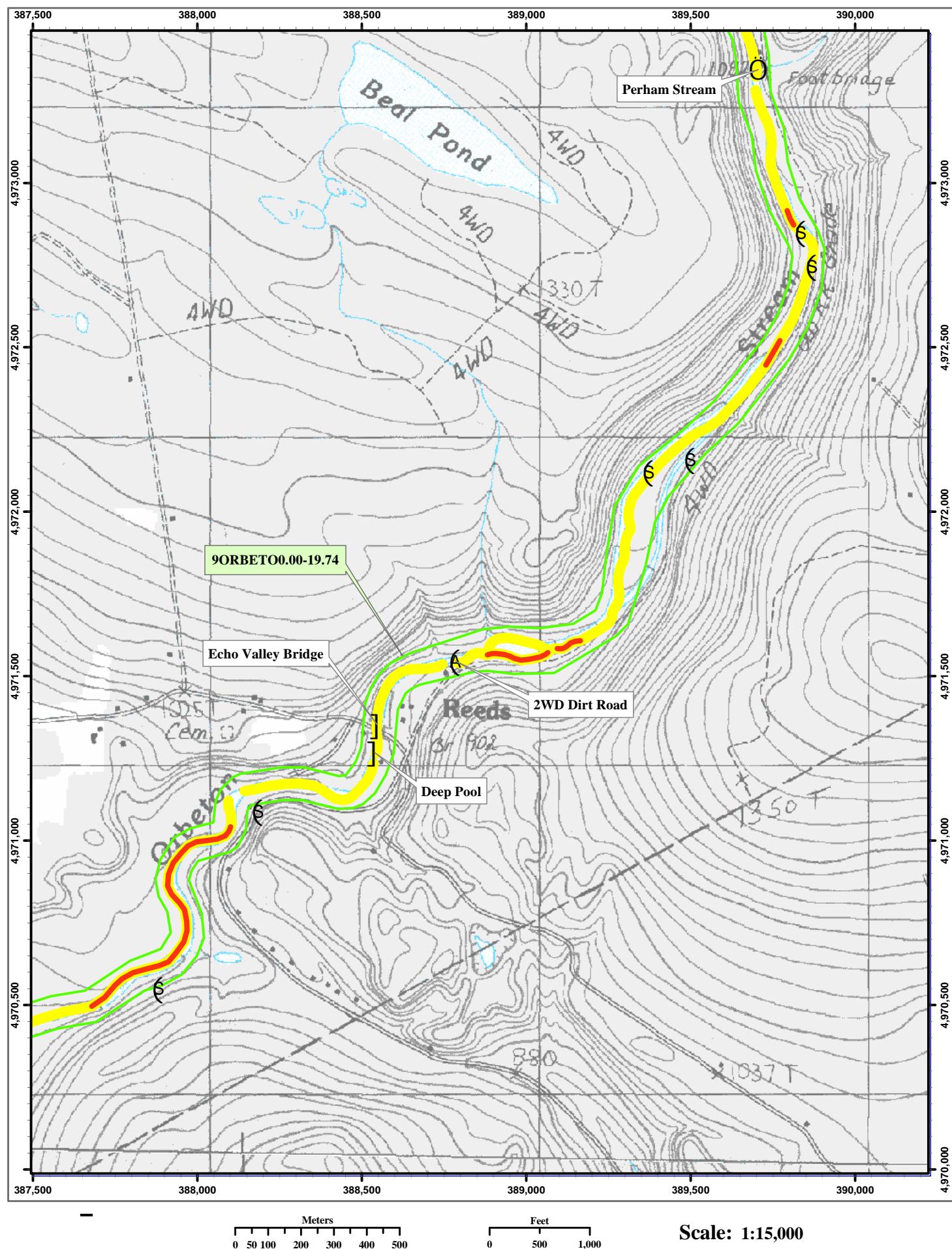
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Orbeton Stream

Map 44



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

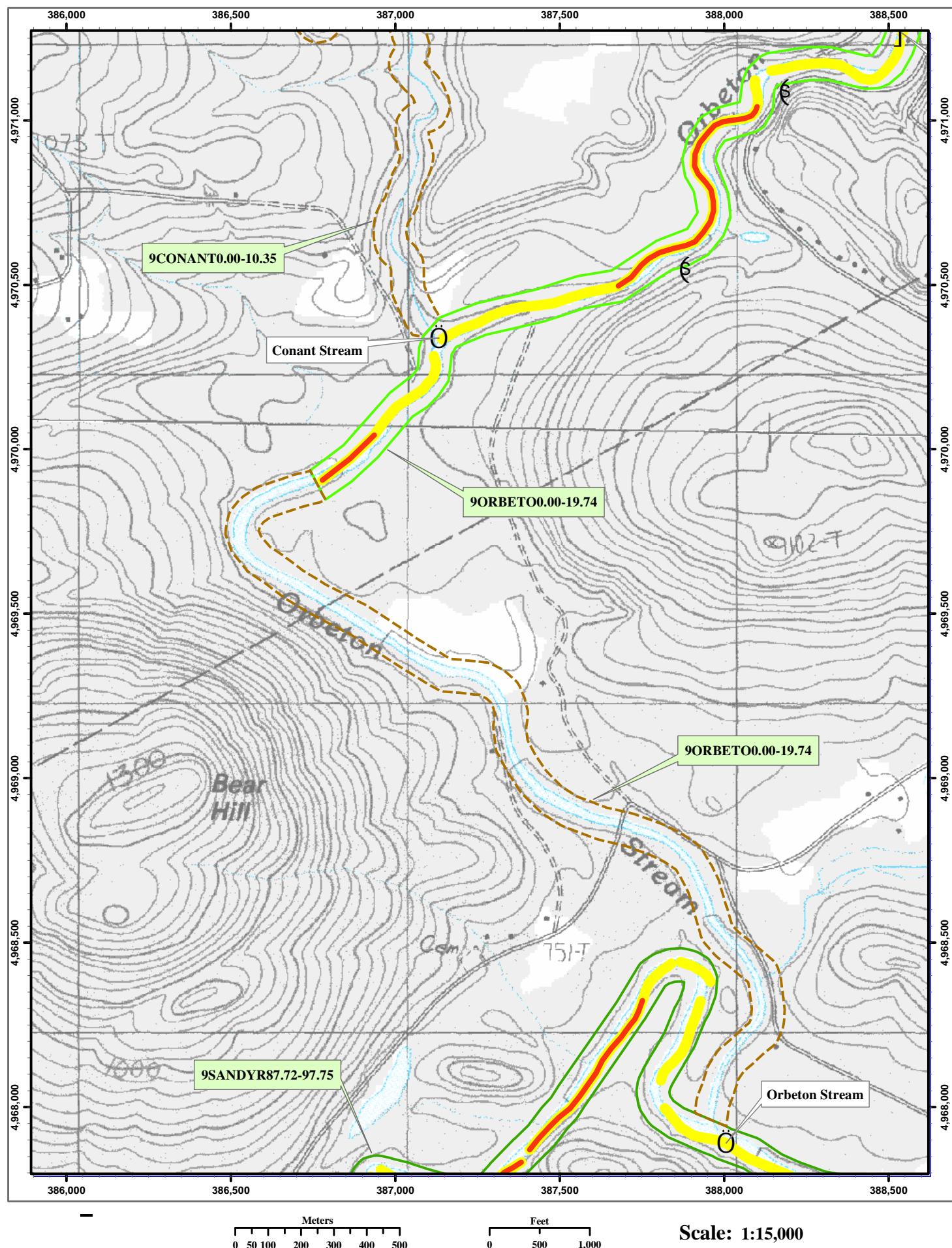
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Orbeton Stream

Map 45



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

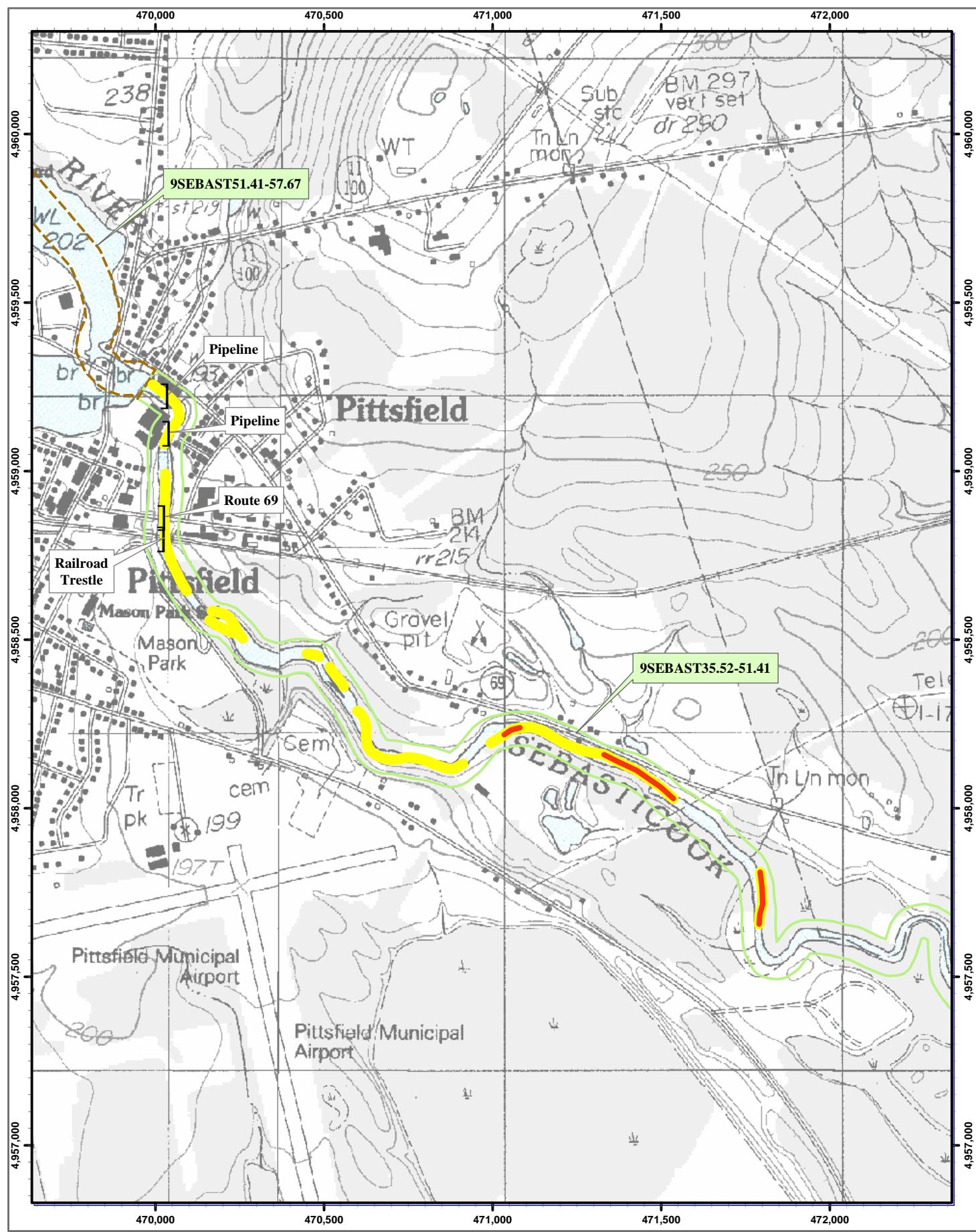
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sebastian River

Map 46



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

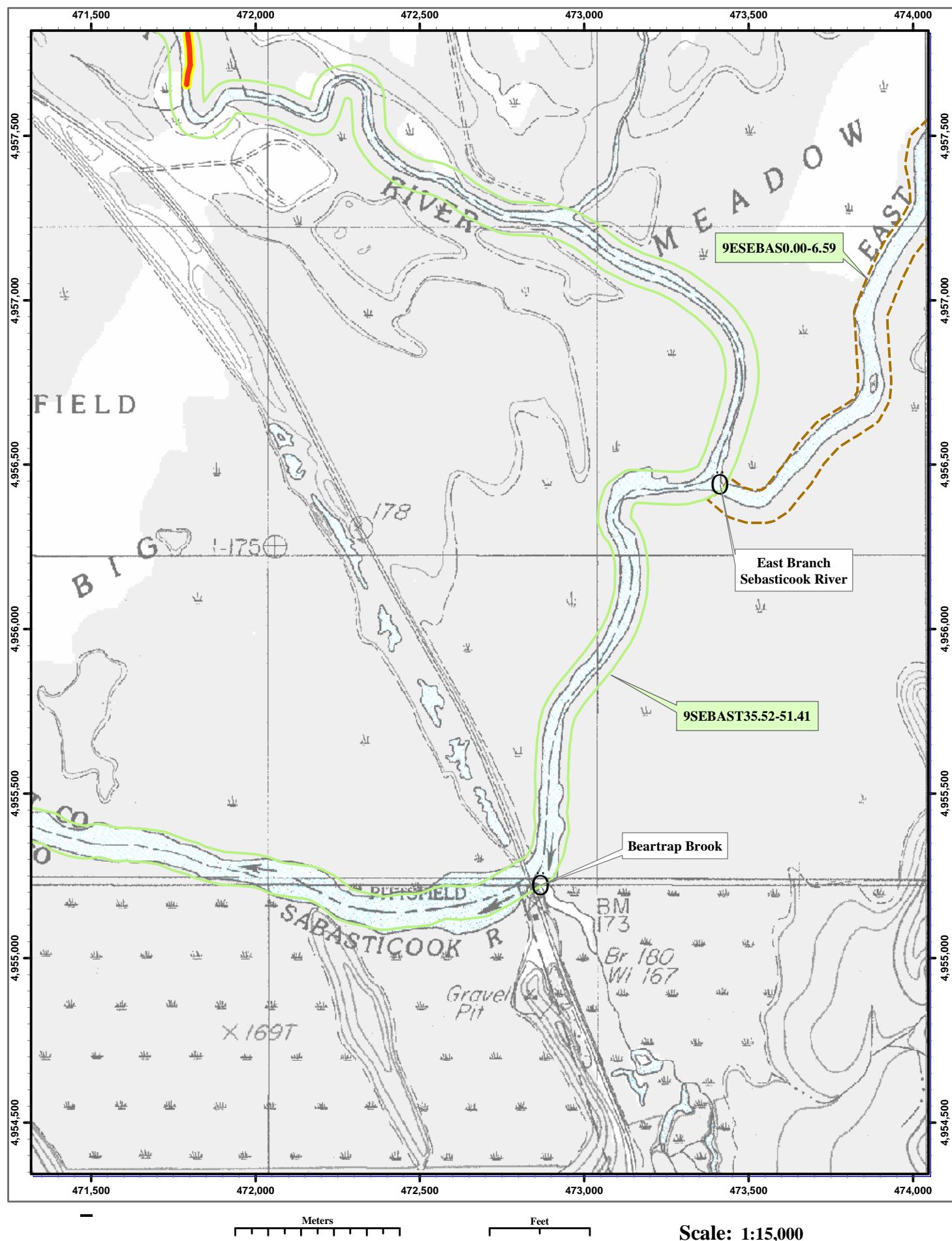
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sebastian River

Map 47



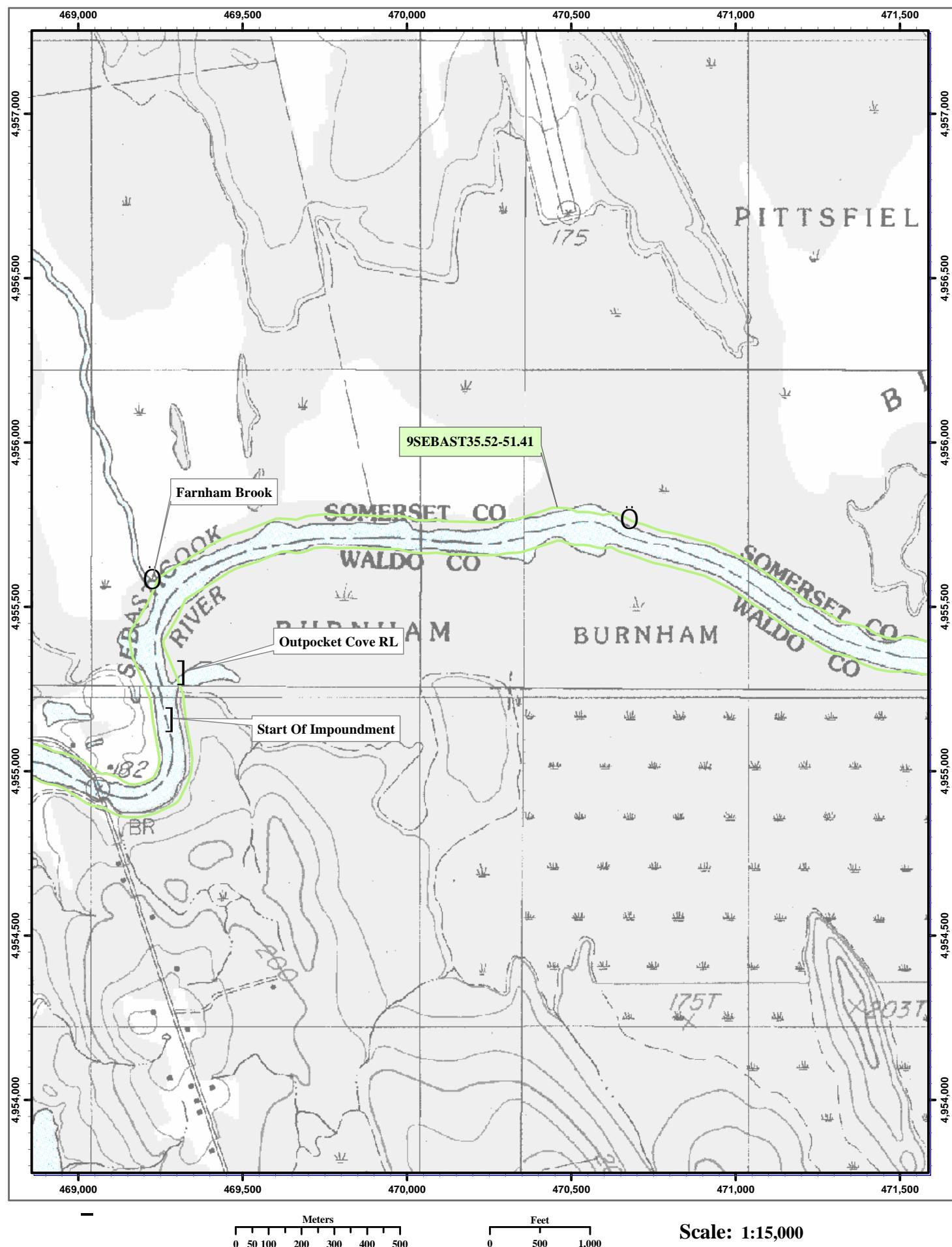
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sebastian River

Map 48



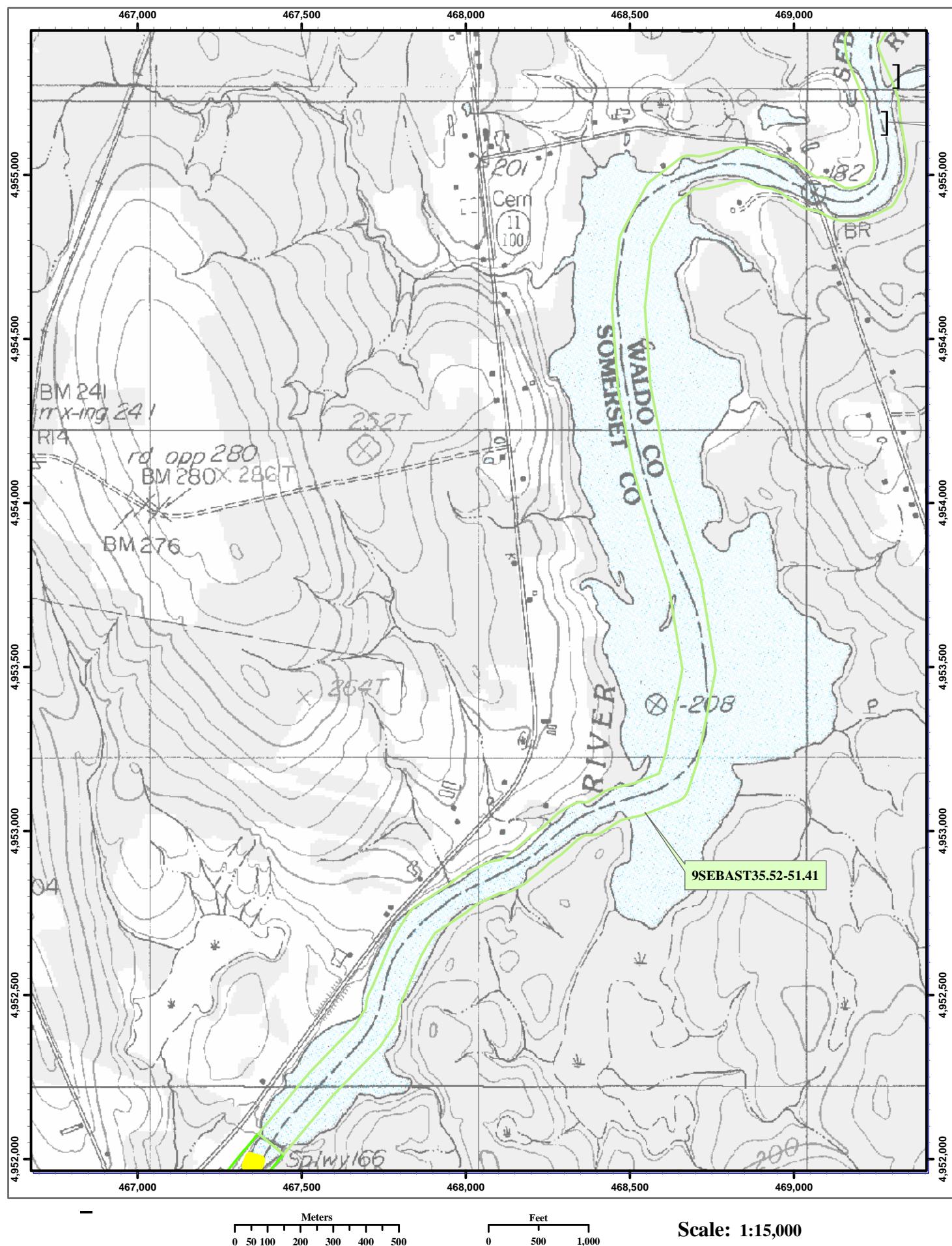
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sebastian River

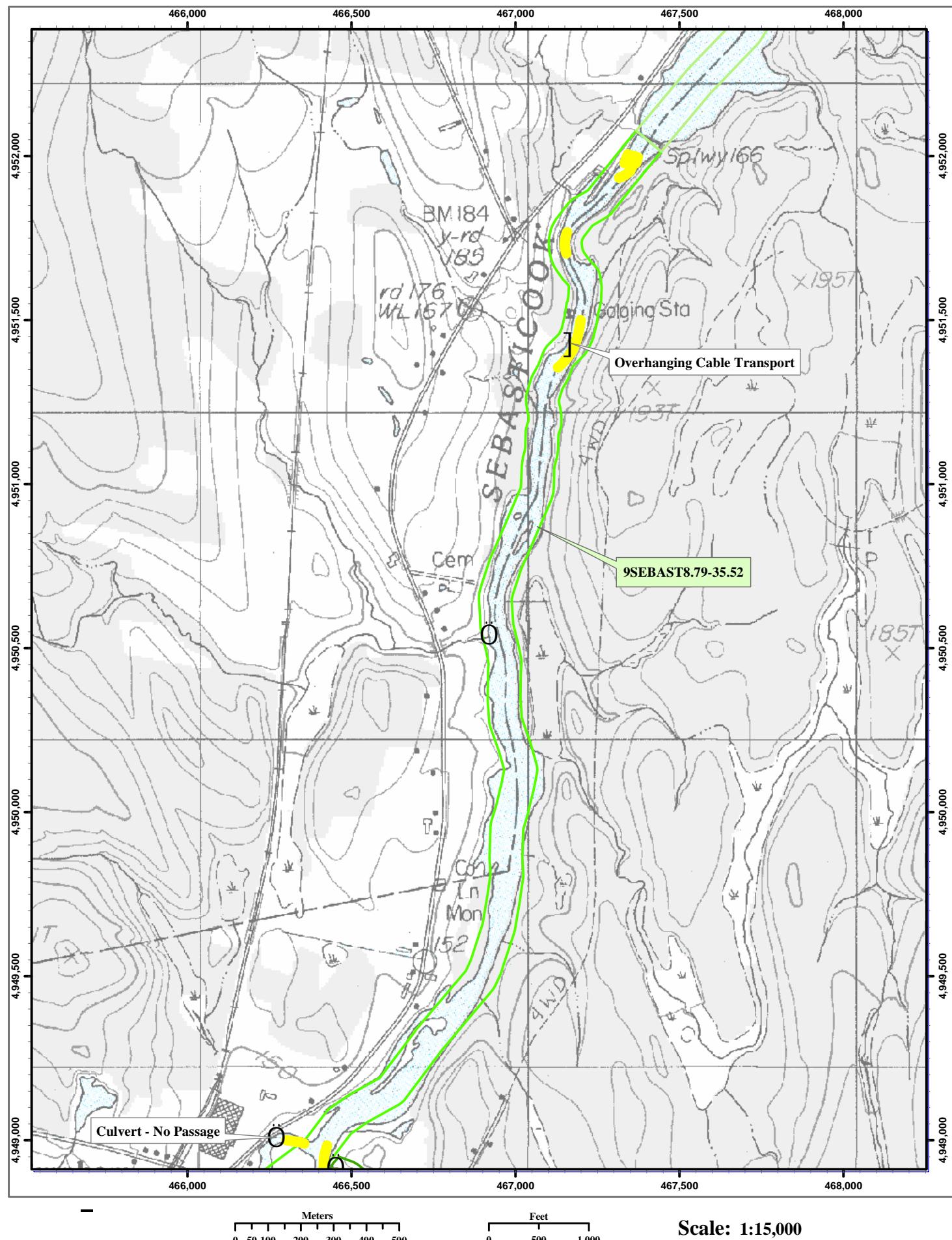
Map 49



Kennebec River

Sebastian River

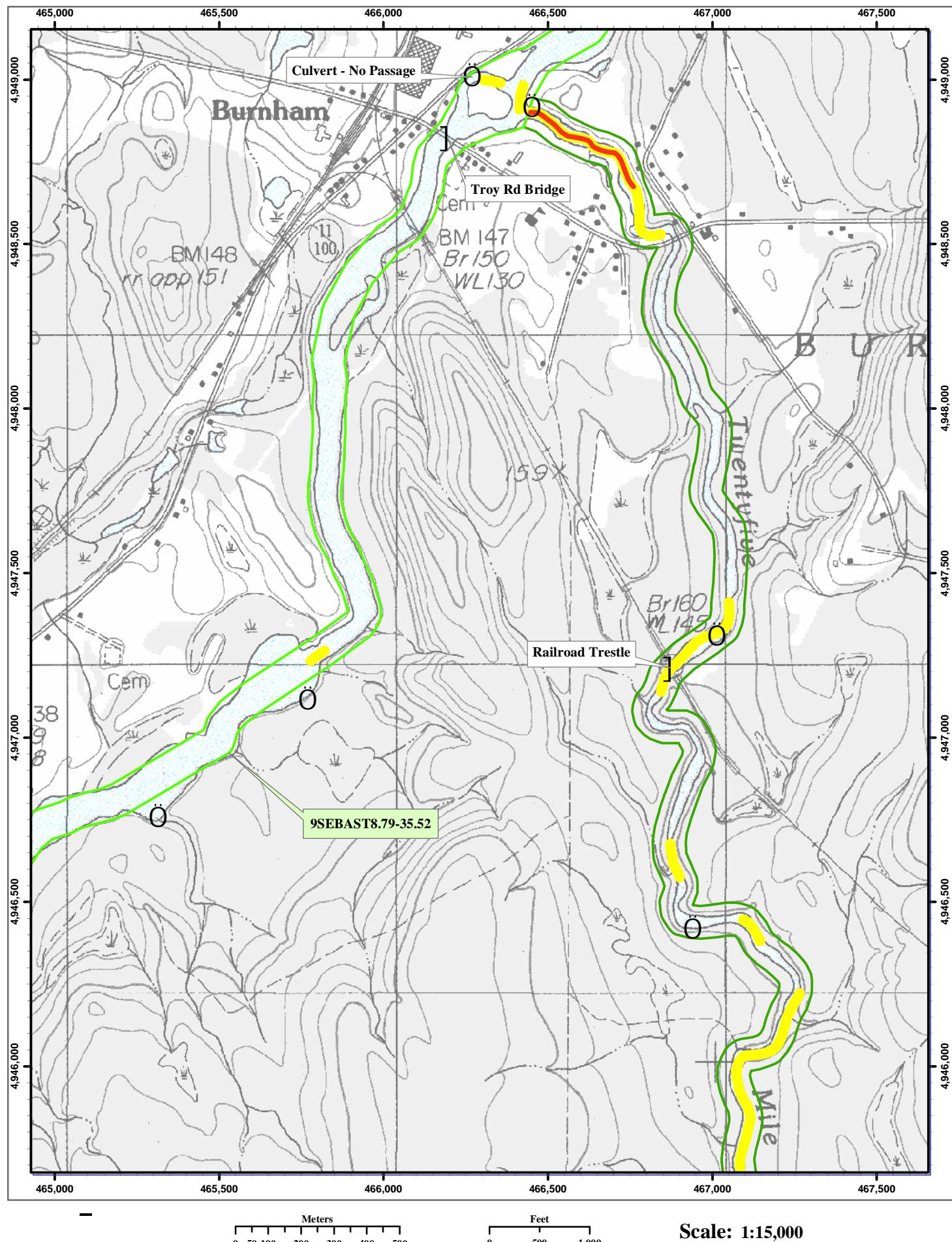
Map 50



Kennebec River

Sebastian River

Map 51



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

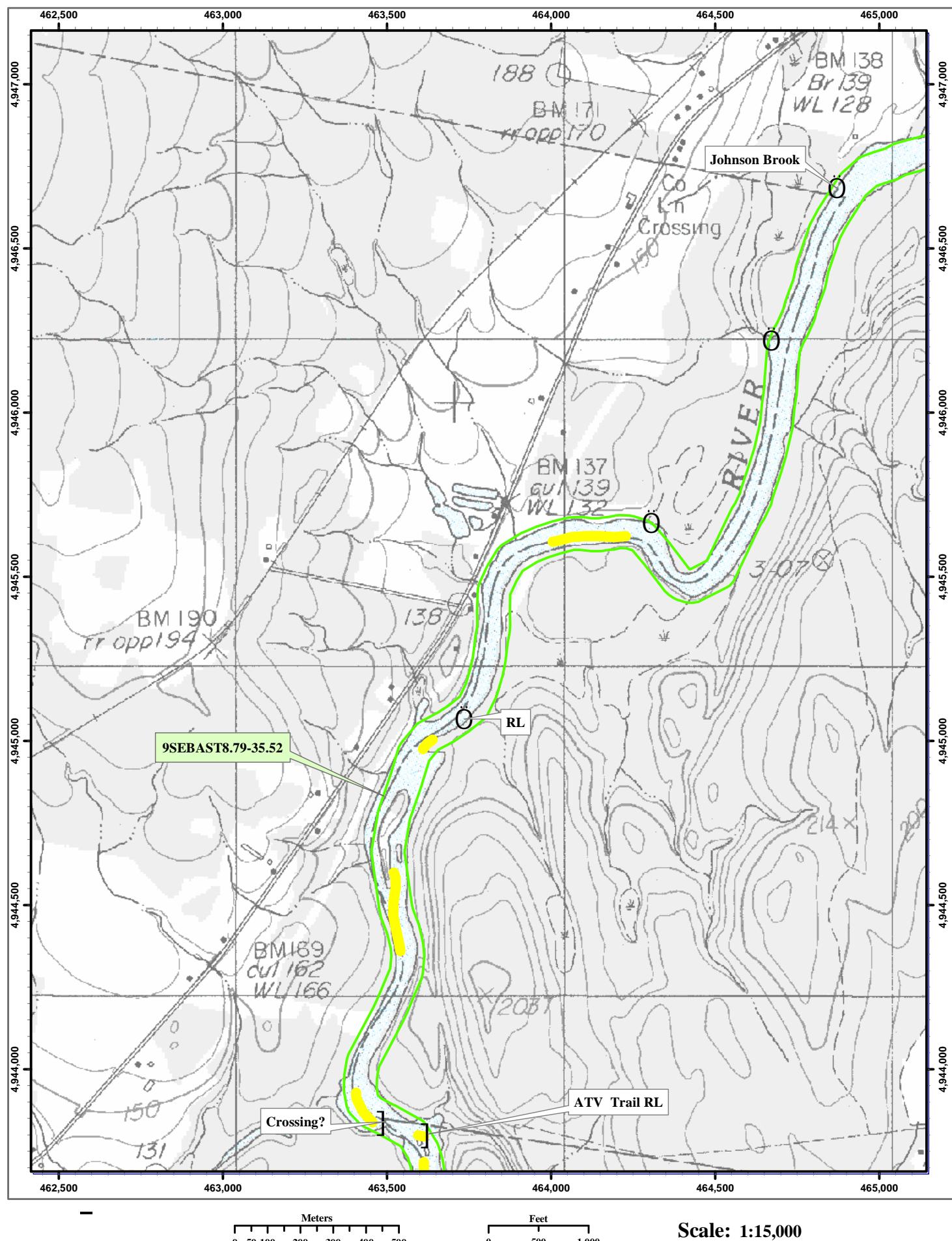
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sebastian River

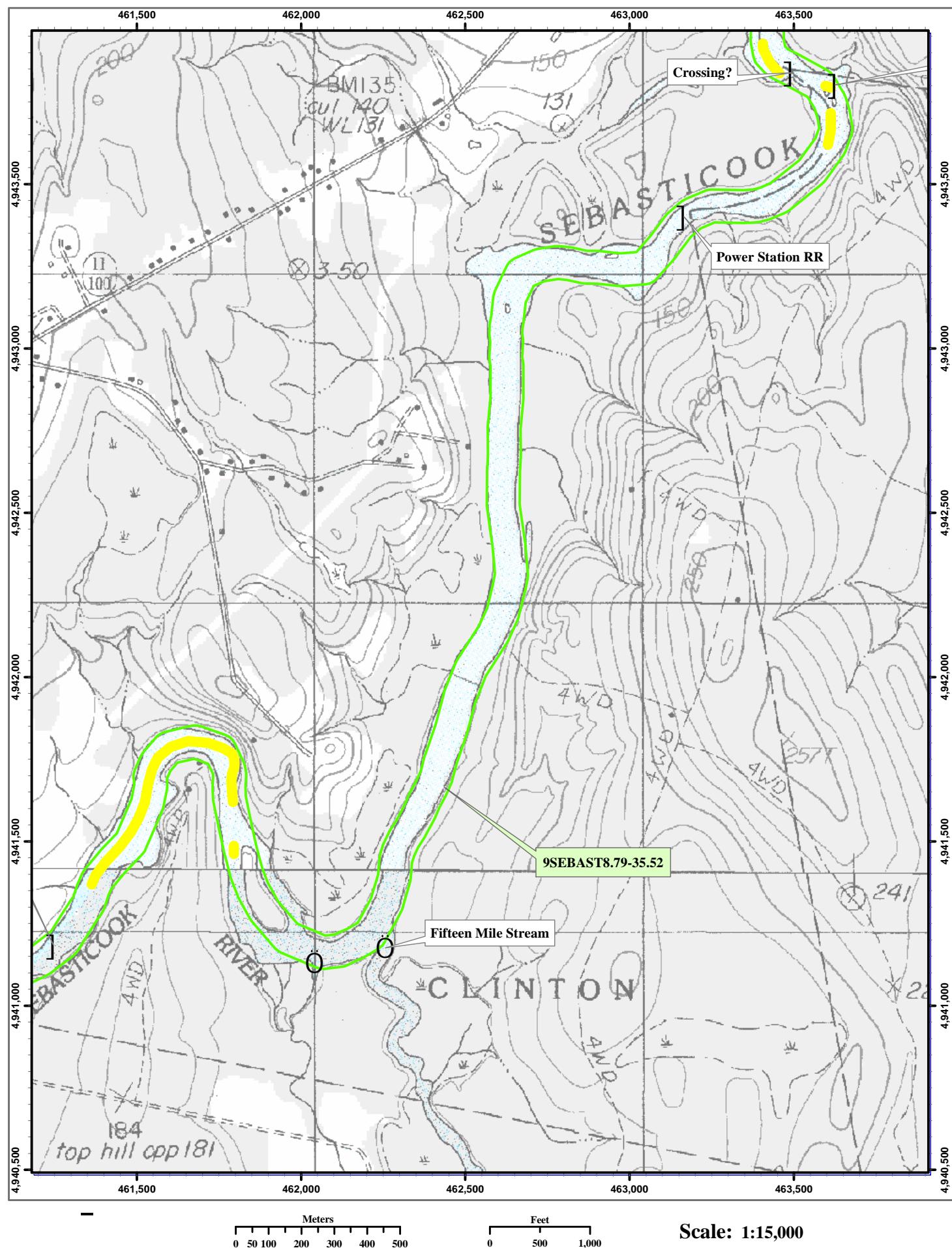
Map 52



Kennebec River

Sebasticook River

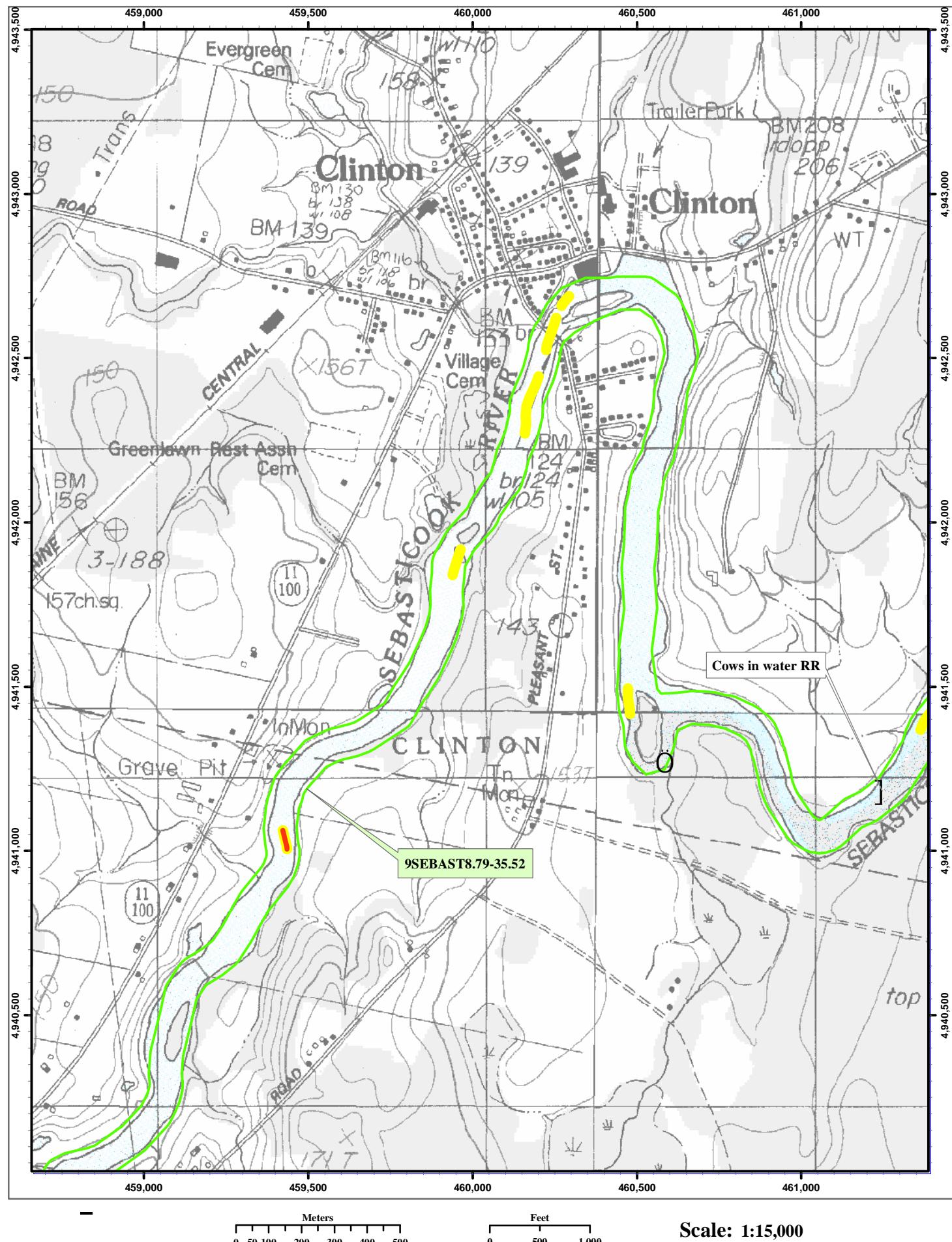
Map 53



Kennebec River

Sebastian River

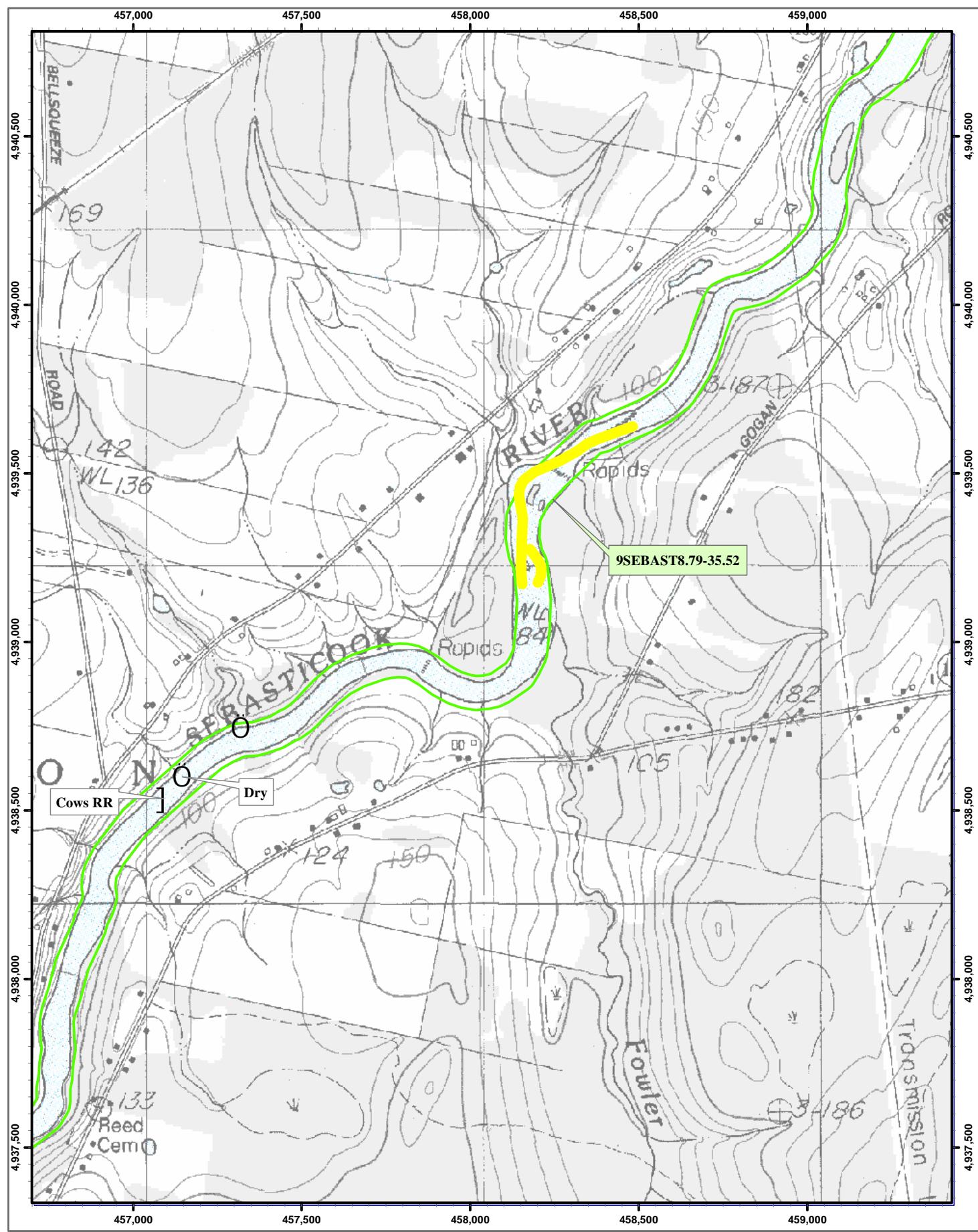
Map 54



Kennebec River

Sebasticook River

Map 55



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

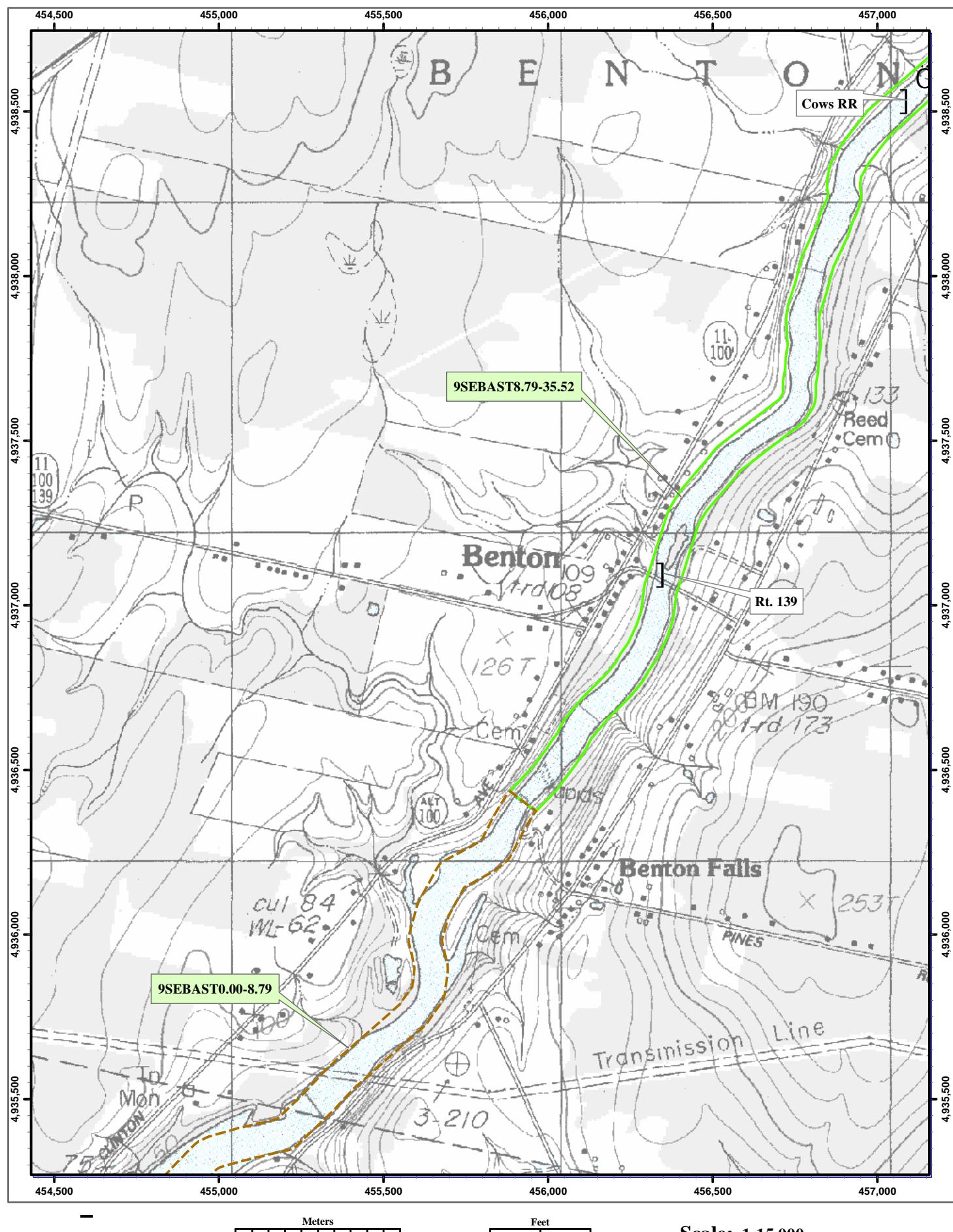
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Sebastian River

Map 56



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

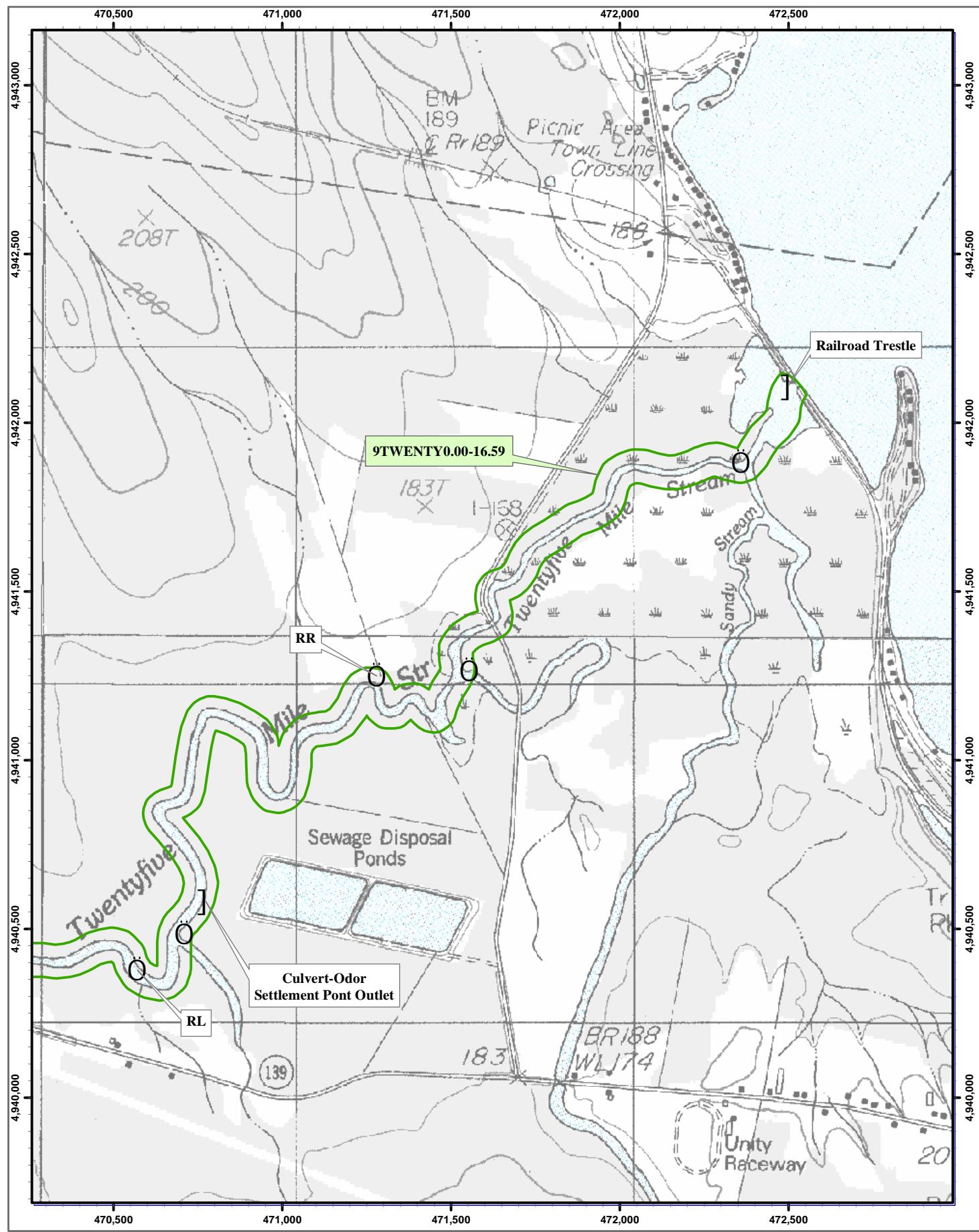
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Twentyfive Mile Stream

Map 57



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

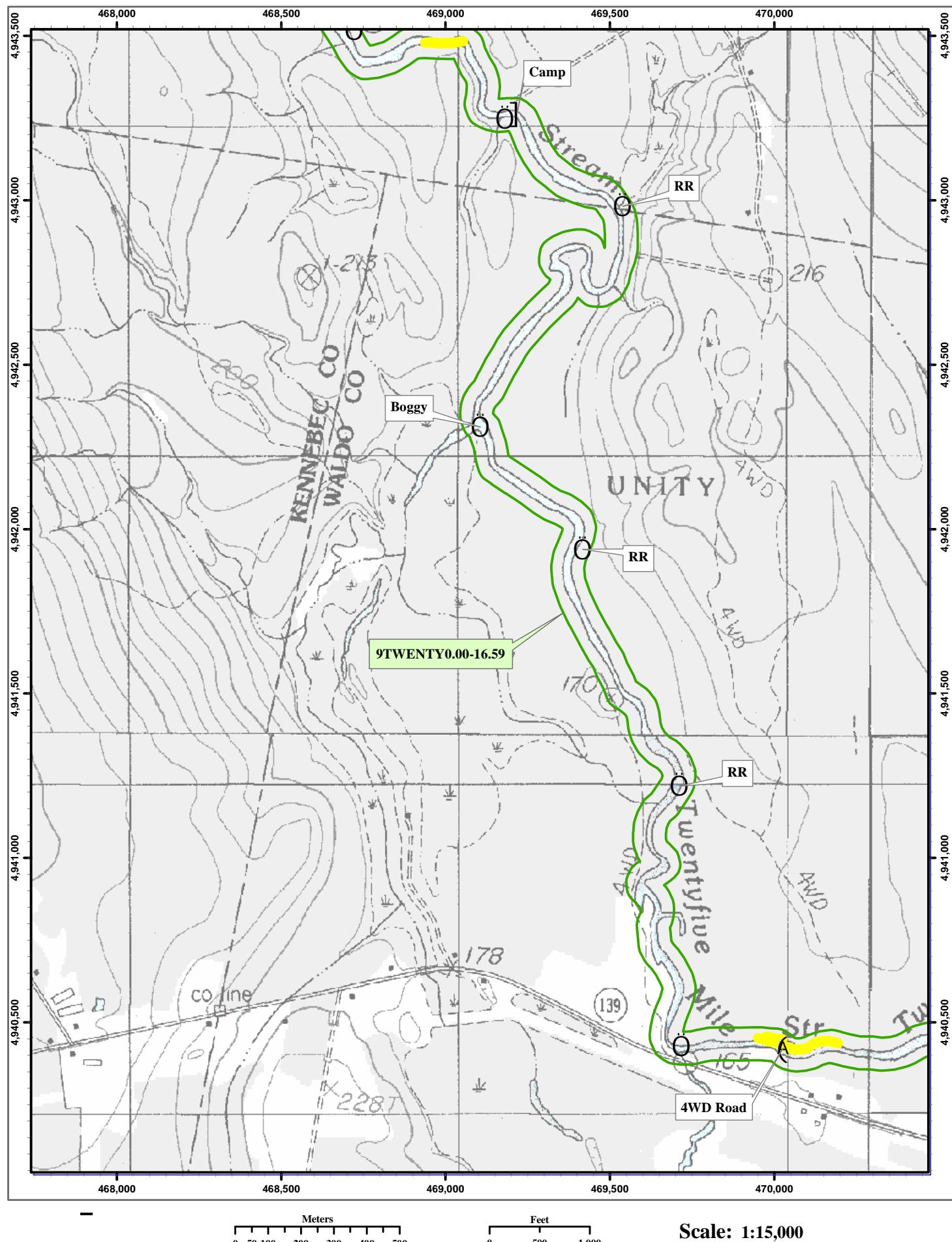
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Twentyfive Mile Stream

Map 58



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

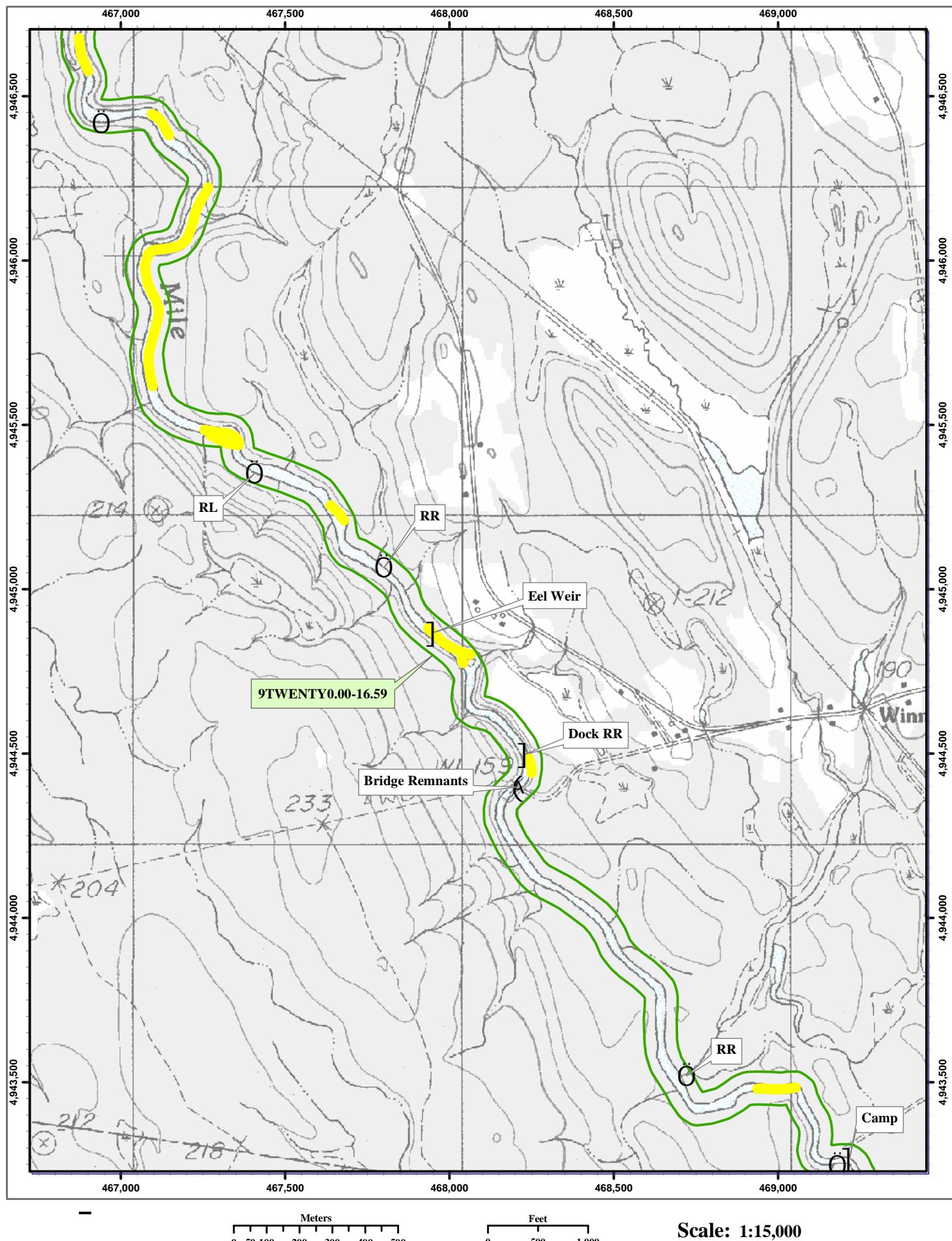
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Twentyfive Mile Stream

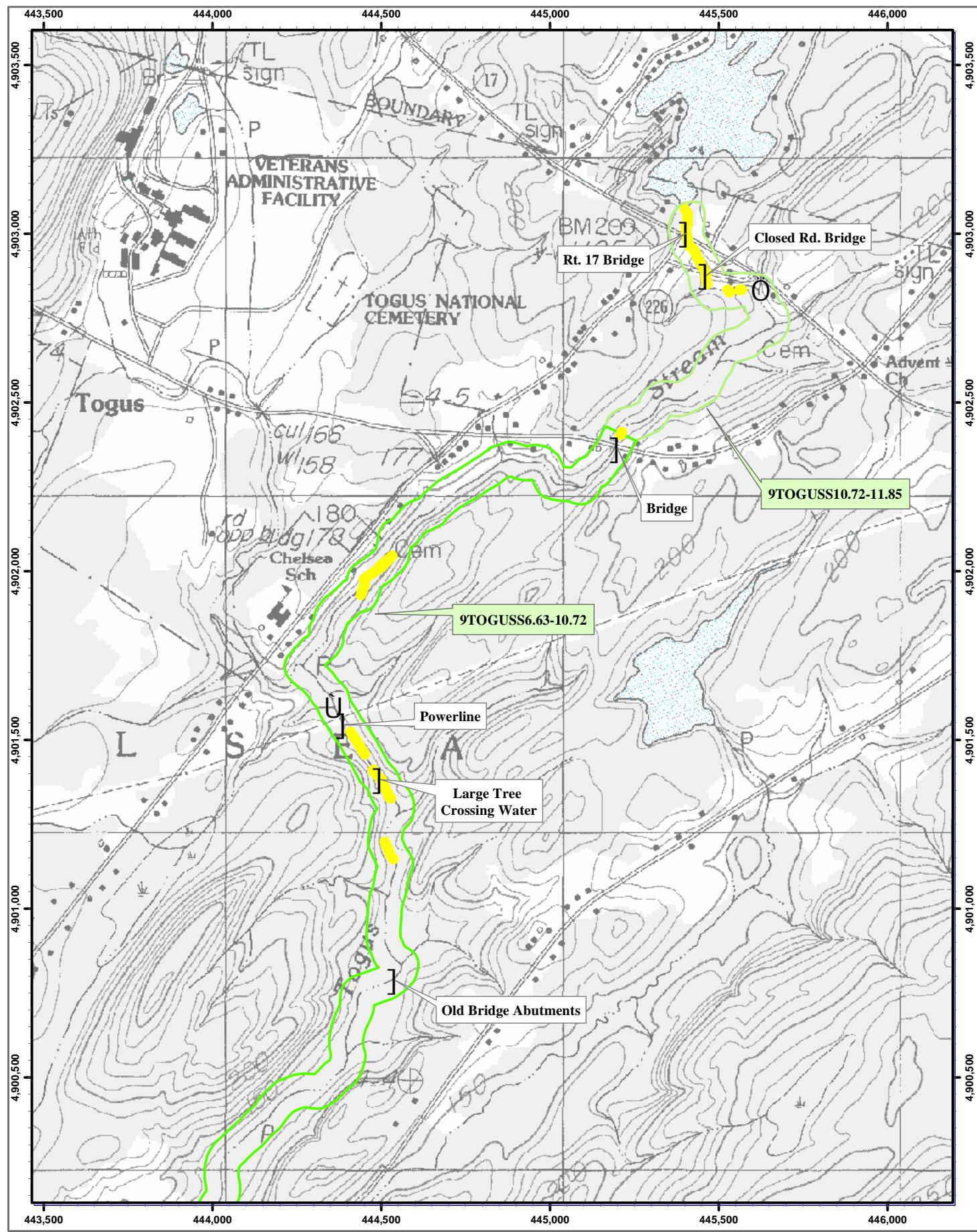
Map 59



Kennebec River

Togus Stream

Map 60



Meters
0 50 100 200 300 400 500

Feet
0 500 1,000

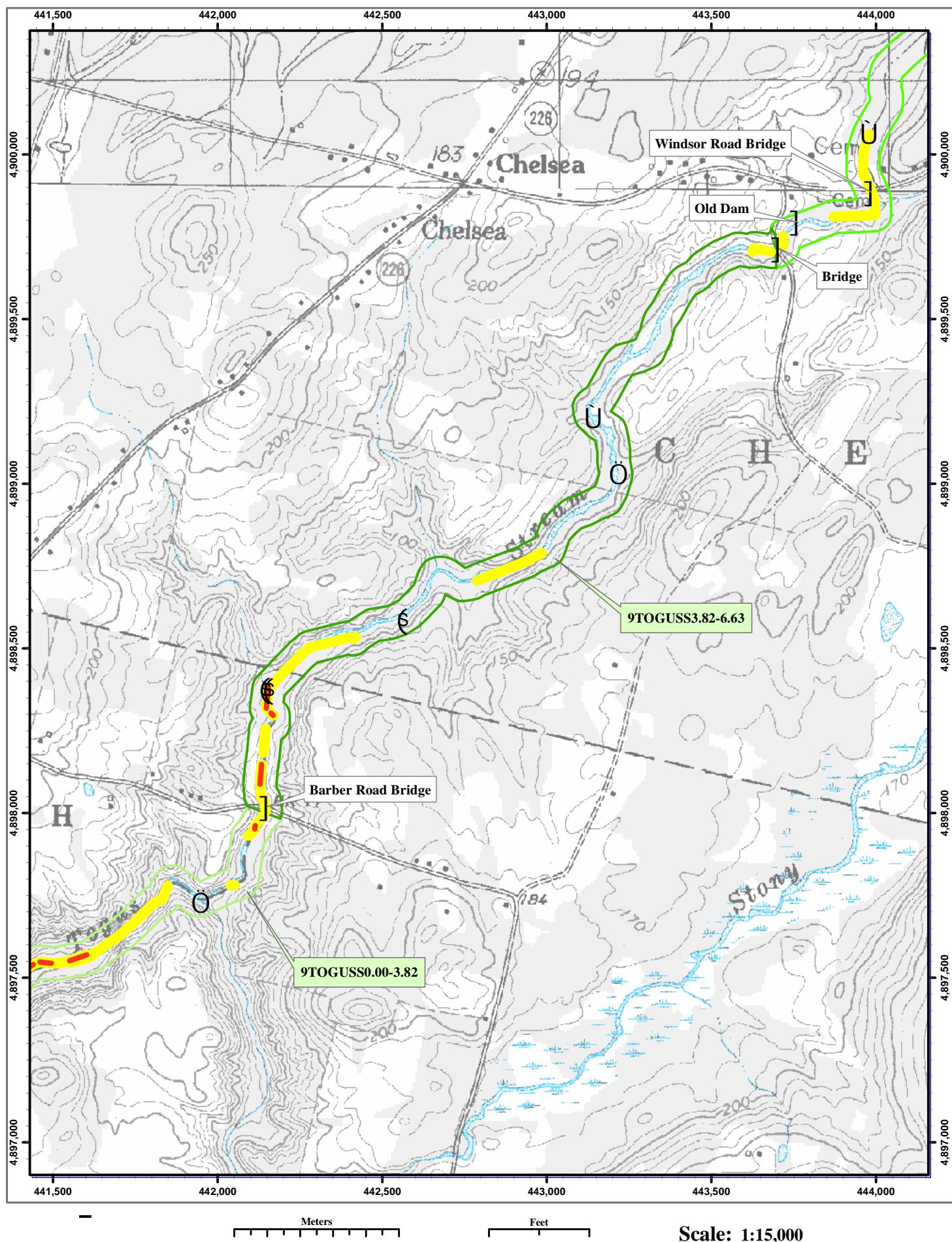
Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006

Kennebec River

Togus Stream

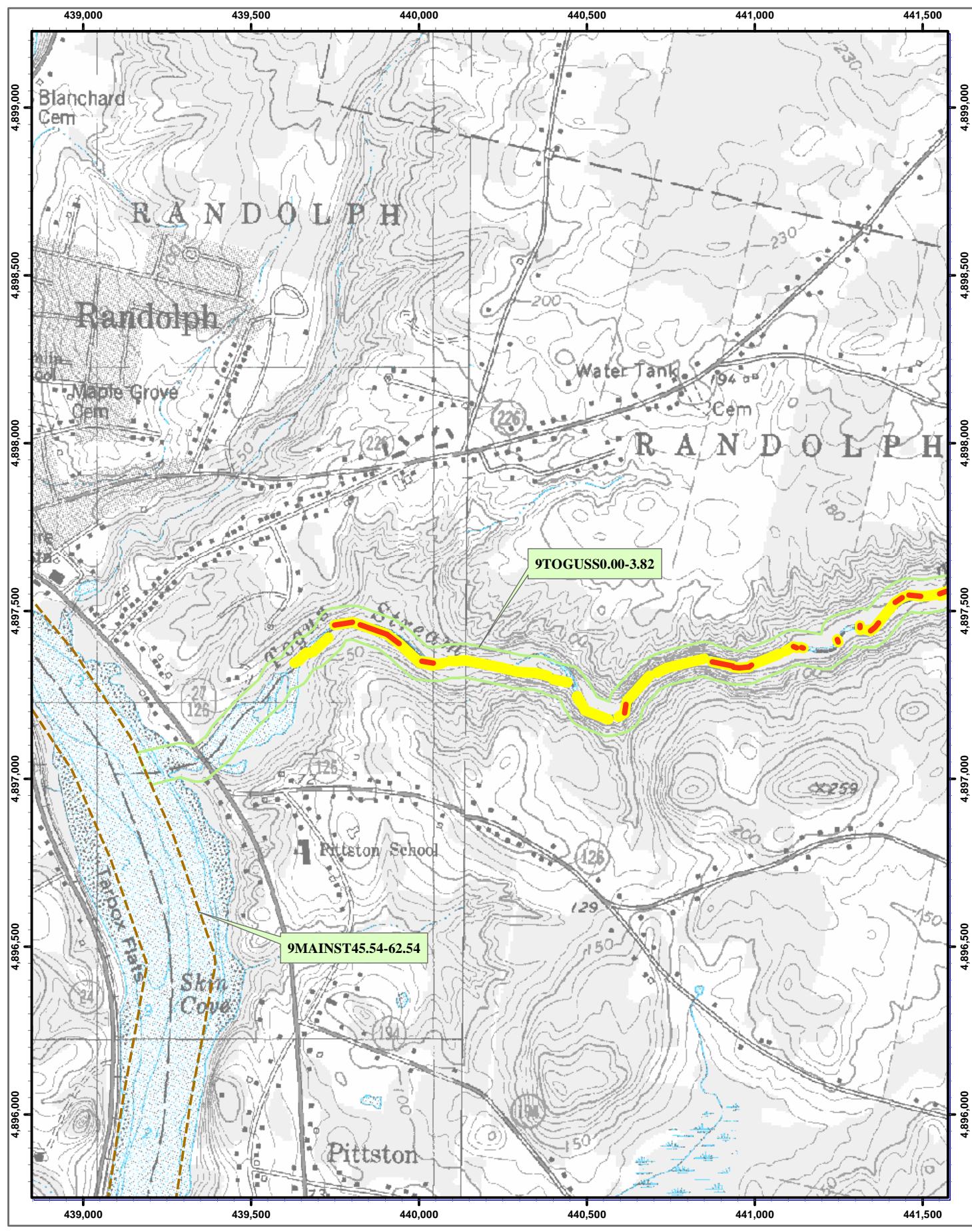
Map 61



Kennebec River

Togus Stream

Map 62



Scale: 1:15,000

Maine Atlantic Salmon Habitat Atlas April 2006